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Pacific Marine Science Report 75-7

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THE HOWE SOUND CURRENT METERING PROGRAM, VOLUME I, – DATA REPORT, STN. HS–3

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W.H. Bell

INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY

Victoria, B.C.

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PACIFIC MARINE SCIENCE REPORT 75-7

THE HOWE SOUND CURRENT METERING PROGRAM, VOLUME I - DATA REPORT, STN. HS-3

by

W.H. Bell

INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY
Victoria, B.C.

June, 1975

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ABSTRACT

Current meter data, and some temperature and salinity data, obtained for several depths at three locations in Howe Sound are presented in three volumes. The presentations are chiefly statistical in nature. They extend over a period slightly greater than two years, beginning in late 1971.

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INTRODUCTION

In 1971, interest was expressed in examining the oceanographic characteristics of Howe Sound in some detail. The Federal Government had announced that a large rail terminal and deep-water ship docking facility would be established at the head of Howe Sound. This facility would be used to supply much of British Columbia's interior population and industry, and to ship out export materials. As a result, a considerable increase in marine traffic was anticipated, increasing the need for information on tidal currents and other water movements, and increasing the possibilities for contamination of the Sound.

There were other reasons for the interest as well. Several industries having a high pollution potential were already in operation in Howe Sound and, with the construction of the proposed shipping facility, more were likely to be established. Future population expansion in the Lower Mainland area might be met to some extent by residential development in some areas of Howe Sound, with attendant environmental problems such as waste disposal and increased silt loads. The development of a transport or dispersion model for water-quality management in Howe Sound was proposed, which would require an oceanographic data input. In addition, various biological, chemical and ecological studies were underway or proposed for the Sound, most of which required some knowledge of the oceanographic features of the area.

Only a limited amount of data was available from previous studies, principally those of Waldichuk et al (1968) who conducted periodic cruises to the vicinity of a number of effluent-producing industries. The current measurements were sparse, and were obtained using surface drogues and Ekman current meters deployed over the side of a ship. The Institute of Oceanography at the University of British Columbia had also obtained a small amount of data in Howe Sound.

The measurement program subsequently undertaken consisted of two hydrographic cruises and a series of moored-buoy installations. The cruise data has been previously reported (Bell, 1974). The purpose of the present report is to present the data obtained by instruments suspended beneath the buoys, principally current speed and direction, accompanied much of the time by temperature values and occasionally by salinities.

OBSERVATIONAL PROCEDURES

The current-metering program in Howe Sound, using taut-line moored buoys, originally anticipated that six stations would be occupied for a period of up to a year each. At every station, several self-recording current meters would be suspended at various depths below the surface. An anemometer would be mounted on each buoy for wind measurements. As it developed, there were only sufficient resources available to maintain two stations at a time, and only three stations were occupied. Also, there was only one anemometer available for a short period of time and it malfunctioned.

The program commenced in November, 1971 with a buoy installation at Station HS-4 (Fig. 1). Current meters were placed at depths of 3, 10, 30, and 130 metres from the surface. The water depth was 145 metres. Measurements at

this station continued through to November, 1972. A second installation was made at Station HS-3, commencing in February, 1972 and continuing through to November of that year. In this case, current meters were located at depths of 3, 10, 30 and 235 metres, with a water depth of about 250 metres. The final station to be monitored was HS-5. This station is a short distance inside the sill in Howe Sound (Fig. 2). Here, sufficient current meters were being used so that it was decided to install two separate arrays about 250 metres apart, thus reducing the loss if a buoy should chance to be snagged by the tow line of one of the many tug boats traversing the area. The first buoy was installed at the end of November, 1972 and the second in January, 1973. Current meters were located at up to eight different depths for varying periods of time. The arrays were finally removed in February, 1974. Generally speaking, the instruments were deployed for about six weeks at a time, after which they were recovered for replacement of batteries and magnetic recording tape. The principal vessel used in this work was F.R.B. A.P. KNIGHT.

Two types of current meters were employed in the program. The Geodyne Model A-850 was used in the near-surface position (about 3 metres depth) because it has a small directional vane enclosed within a cage. Thus, it was unlikely to tangle with the anchor line of the buoy in the event of turbulent surface motions. The Aanderaa Model 4 was used at all other depths. It does have a large unprotected directional fin which could cause problems if placed too close to the buoy. The manufacturer of the Geodyne meter claims a threshold velocity of 26 mm/s, a speed accuracy of 26 mm/s for speeds below 500 mm/s and a direction accuracy of ± 10 degrees. The calibration factor given for the Aanderaa meter implies a threshold velocity of 15 mm/s. The direction accuracy is ± 5 degrees. The Aanderaa meter is fitted with a thermistor, providing temperatures with a resolution of about 0.02 degrees C. Some of these meters also have conductivity sensors with a resolution of 0.07 mmhos. The Geodyne meter samples in "bursts", recording 15 measurements spaced 5 seconds apart and repeating the procedure every 15 minutes. The vector average of the 15 measurements is used in subsequent processing. The Aanderaa meter takes a single sample of direction for each 10 minute interval, but integrates the speed over this whole period. The two types of current meters have been described in more detail by Tabata et al (1971).

Although no wind data were obtained at the actual buoy locations, some observations are available from nearby points. The Atmospheric Environment Service of Environment Canada maintains an anemometer at the head of Howe Sound. As one might expect from the topography of the area, there appears to be a reasonable correlation between the north-south components of wind velocity measured at this location and those experienced at seaward points along the axis of the Sound (except occasionally in one or two locations where the flow of cold air down a hanging valley complicates the situation). Also, Dr. L. Giovando at the Pacific Environment Institute in West Vancouver had several anemometers deployed at various locations in Howe Sound during 1972-73. In particular, one was positioned on Pam Rock, near Station HS-3.

DATA PROCESSING AND PRESENTATION

The raw data tapes from the Geodyne meters had to be sent to the instrument manufacturer (E.G. & G., Waltham, Mass.) for translation to an IBM-compatible format. They returned a 9-track magnetic tape, containing the translated data, for further processing as required. The raw data tapes from the Aanderaa instruments were translated in-house, using a HP2115 mini-computer and software developed by Del Smith. Second stage processing of the translated data consisted of formatting the data for FORTRAN routines and applying appropriate calibration factors where necessary. During this stage, an acceleration criterion and an interpolation scheme were applied to speed data to smooth out any unrealistic variations or 'spikes'. These spikes arose from readings in the dead-band area of the speed potentiometer and from tape noise.

Requests received from biologists and ecologists indicated a preference for examination of the data in graphical form, such as histograms and progressive vector diagrams (PVD's), rather than in time series form. Therefore, the data are presented here in the following forms:

(a) PVD

(b) Frequency distribution plot for speed and direction

(c) Frequency distribution list for speed and direction

(d) Speed histogram

(e) Direction histogram

(f) Temperature histogram (when available)

(g) Salinity histogram (when available).

The processing routines were written so that each of these presentations came directly from the computer in page size. This allowed the printer to use them directly without resorting to photographic reduction first. It was necessary to break the information contained on a data tape into two or three smaller segments to avoid cluttering the PVD's. A data length of about 3 weeks appeared optimum, so the basic segments for presentation were taken to be 2000 records for Geodyne tapes (15 min. sample interval) and 3000 records for Aanderaa tapes (10 min. interval). If the number of records left at the end of a tape was less than 1/3 of the basic number, then these records were grouped with the preceding segment. The initial segment of each data tape contained a varying number of records which were of no value because they represent samples taken after the instruments were switched on but before they were in position in the water. Such samples were included in the translation procedure for timing purposes but were omitted from subsequent processing. Thus, in the presentations, some of the initial segments have fewer than 2000 or 3000 records, and some of the final segments have more. Hourly averages were used in plotting the PVD's. The frequency distribution diagrams have a change in the scale of the speed axis for water depths of 30 m or more.

The histogram presentations occasionally have truncated peaks. This

was done to provide greater detail in the remainder of the plot. The correct height of the peak is given in the frequency column of the histogram. The resolution available in the data logging process is limited and occasionally results in quirks in the histograms. For example, the temperature resolution is about 0.02°C. Whenever the counting increment for the histogram is also 0.02°C, the result of the interaction is that not all of the increments obtain counts, some being blank or empty. A similar phenomenon occurs in some speed histograms, most notably for the increment from 77-80 mm/sec when the increment size is 4 mm/sec. The output from the Aanderaa current meter represented by the number 15 is processed and rounded off by the computer program to give 76 mm/sec. The number 16 rounds to 81 mm/sec. Thus, there is no possibility of obtaining counts for the increment in question.

Some data were lost due to instrument malfunctions, weak batteries, and water leaks. Some data were not recoverable because of a very low signal-to-noise ratio, apparently resulting from poor or improper tape degaussing techniques. Unfortunately, data analysis was lagging well behind instrument deployment, so some of these problems weren't detected immediately. The lengths of record for the station reported on in this volume, and the reasons for loss of data, are given in Figure 3 and Table I.

Because of the large amount of data involved, the results are presented in three volumes, one dealing with each station. The original data is available on request for anyone wishing to examine the time series obtained for a given period at a particular station and depth.

ACKNOWLEDGEMENTS

The data presented in this series of reports could not have been obtained without the expert work of J.A. Stickland and R.H. Bigham, who designed and supervised the moorings and maintained the instruments. They were ably assisted on occasion by J.H. Meikle and R. Forbes. The captain and crew of F.R.B. A.P. KNIGHT also provided willing support to the undertaking.

Some of the data processing routines were modified from programs kindly supplied by R. Johns. Much of actual mechanics of punching cards and feeding them to the computer was done by C. Goodman.

REFERENCES

Bell, W.H. 1974. Oceanographic Observations in Howe Sound - 1972. Pac. Mar. Sci. Rept. 74-7, Marine Sciences Directorate, Victoria.

Tabata, S., J.A. Stickland and B.R. de Lange Boom. 1971. The Program of Current Velocity and Water Temperature Observations from Moored Instruments in the Strait of Georgia - 1968-1970 and Examples of Records Obtained. Tech. Rept. No. 253, Fish. Res. Bd. Can., Nanaimo.

Waldichuk, M., J.R. Markert and J.H. Meikle. 1968. Fraser River Estuary, Burrard Inlet, Howe Sound and Malaspina Strait Physical and Chemical Oceanographic Data, 1957-1966, Volume II, Sept. 1962 to July 1966. M.S. Rept. Series No. 939, Fish. Res. Bd. Can., Nanaimo.

TABLE I

DATA ACQUISITION AND PROCESSING HISTORY FOR CURRENT METERS AT STN. HS-3

START DAY (PST)	DEPTH (M)	NO. OF RECORDS	DATA TAPE NO.	STAGE 1 TRANSLATION		STAGE 2 TRANSLATION		NOTES
				TAPE NO.	FILE NO.	TAPE NO.	FILE NO.	
07/02/72	3	3958	239/1	RB0410	2	RB0411	23	
	10	6014	101/1	RE0322	51	RE0158	29	
	30	6027	336/3	RE0322	53			j,m
	235	5861	98/16	RE0322	54			j,k
20/03/72	3	3836	239/2	RB0410	5	RB0411	26	
	10	6067	336/4	RE0322	60			j,m
	30	6051	101/2	RE0322	61			j,n
	235	6003	98/17	RE0322	62			j,l
01/05/72	3	4167	239/3	RB0410	9	RB0411	30	
	10	6431	210/6	RE0322	66	RE0158	33	
	30	6306	211/9	RE0322	67	RE0158	34	
	235	6317	337/6	RE0322	68			j,l
14/06/72	3	2958	236/2	RB0410	8	RB0411	38	
	10	5193	333/3	RE0322	72			j,l
	30	5043	211/10	RE0322	73	RE0158	35	
	235	5198	334/6	RE0322	74			j,n
18/07/72	3	4232	239/5	RB0410	12	RB0411	33	
	10	6184	334/7	RE0322	81	RE0158	36	
	30	6235	333/4	RE0322	82	RE0158	37	
	235	6232	211/11	RE0322	83	RE0158	38	
30/08/72	3	0	236/3					d,k
	10	4759	334/8	RE0322	87	RE0158	41	
	30	5030	210/8	RE0322	88			b,k
	235	5018	337/8	RE0322	89	RE0158	42	

TABLE I (CONT'D.)

START DAY (PST)	DEPTH (M)	NO. OF RECORDS	DATA TAPE NO.	STAGE 1 TRANSLATION		STAGE 2 TRANSLATION		NOTES
				TAPE NO.	FILE NO.	TAPE NO.	FILE NO.	
02/10/72	3	0	183/4					d,k
	10	8223	334/9	RE0322	93	RE0158	46	
	30	8382	336/8	RE0322	94	RE0158	47	
	235	8374	98/20	RE0322	95	RE0158	19	g

NOTES:

a. Instrument failure - water leak
b. Instrument failure - encoder or other data logger fault
c. Instrument failure - weak battery
d. Instrument failure - reason unknown
e. Rotor failure or fault in speed recording channel
f. Compass or vane failure or fault in direction channel
g. Thermistor failure or fault in temperature channel
h. Conductivity sensor failure or fault in conductivity channel
i. Unreliable or "noisy" data - reason unknown
j. Unreliable or "noisy" data - tape degaussing problem
k. Data irretrievable
l. Data retrievable with great difficulty
m. Data retrievable with some difficulty
n. Data retrievable with little difficulty

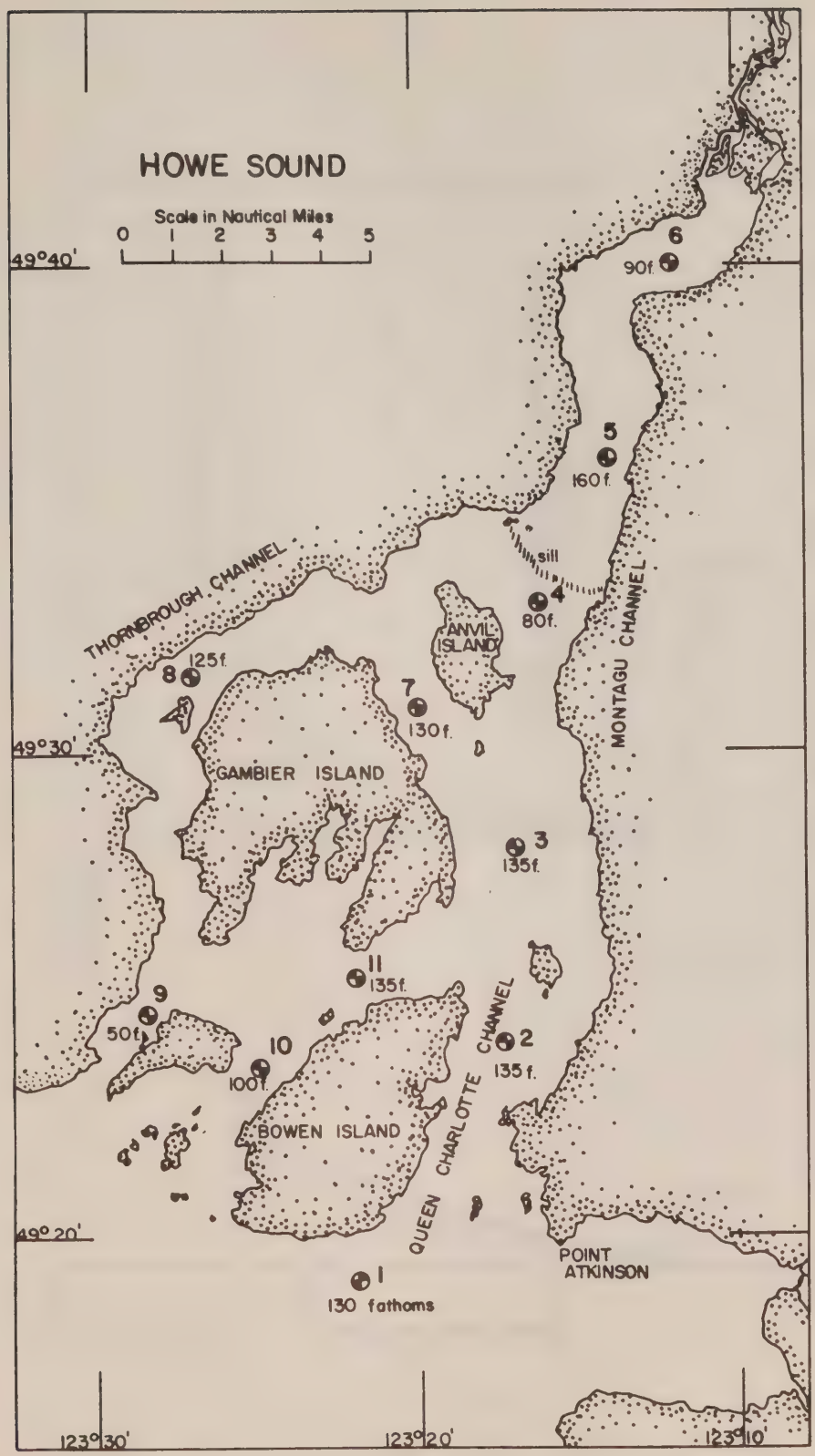

HOWE SOUND
Scale in Nautical Miles
0 1 2 3 4 5
49°40'
49°30'
49°20'
123°30'
123°20'
123°10'
THORNBROUGH CHANNEL
MONTAGU CHANNEL
QUEEN CHARLOTTE CHANNEL
sill
ANVIL ISLAND
GAMBIER ISLAND
BOWEN ISLAND
POINT ATKINSON
1 130 fathoms
2 135 f.
3 135f.
4 80f.
5 160 f.
6 90f.
7 130 f.
8 125f.
9 50f.
10 100f.
11 135f.

Figure 1

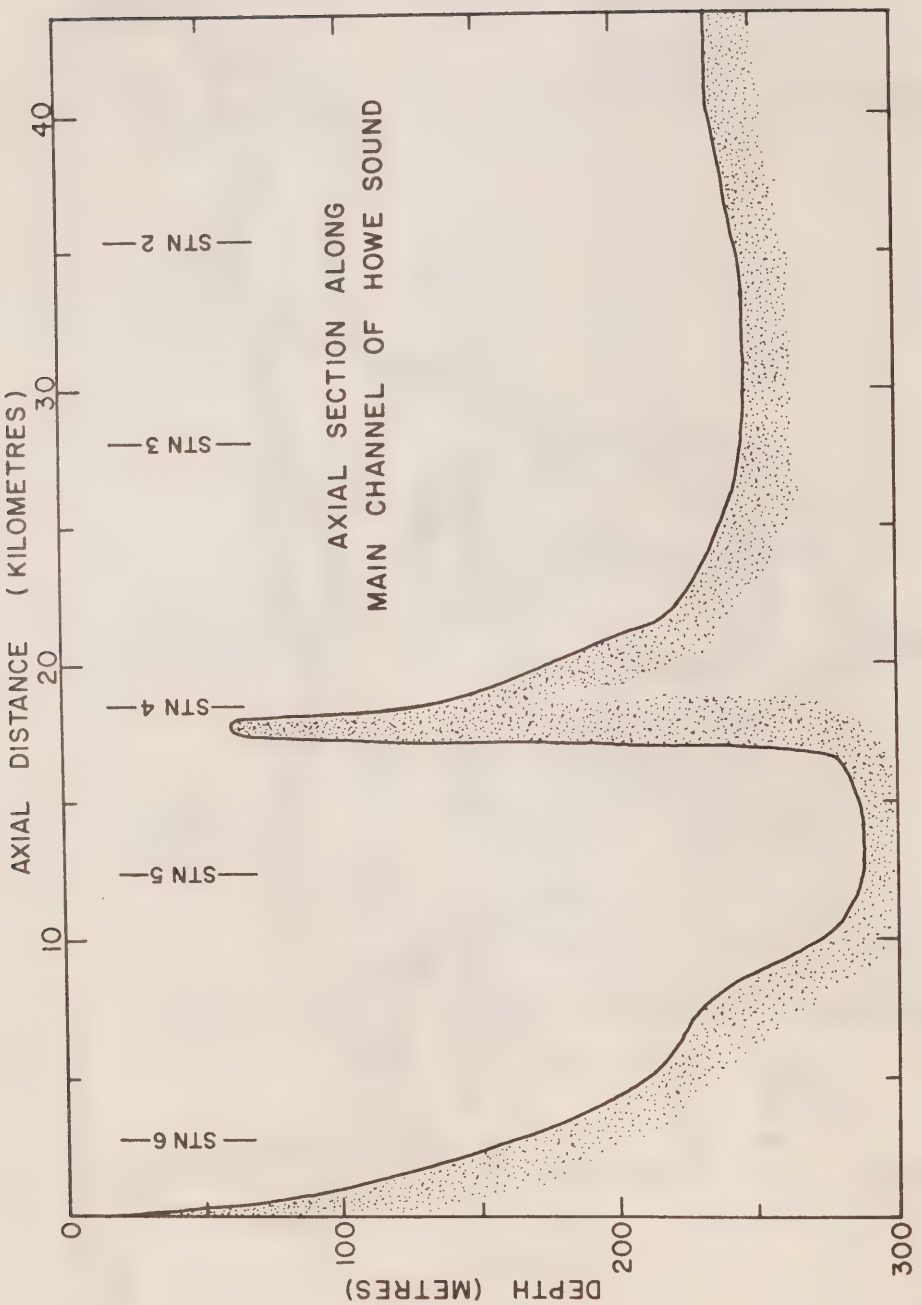

AXIAL SECTION ALONG
MAIN CHANNEL OF HOWE SOUND
STN 2
STN 3
STN 4
STN 5
STN 6
AXIAL DISTANCE (KILOMETRES)
0
10
20
30
40
DEPTH (METRES)
100
200
300

Figure 2

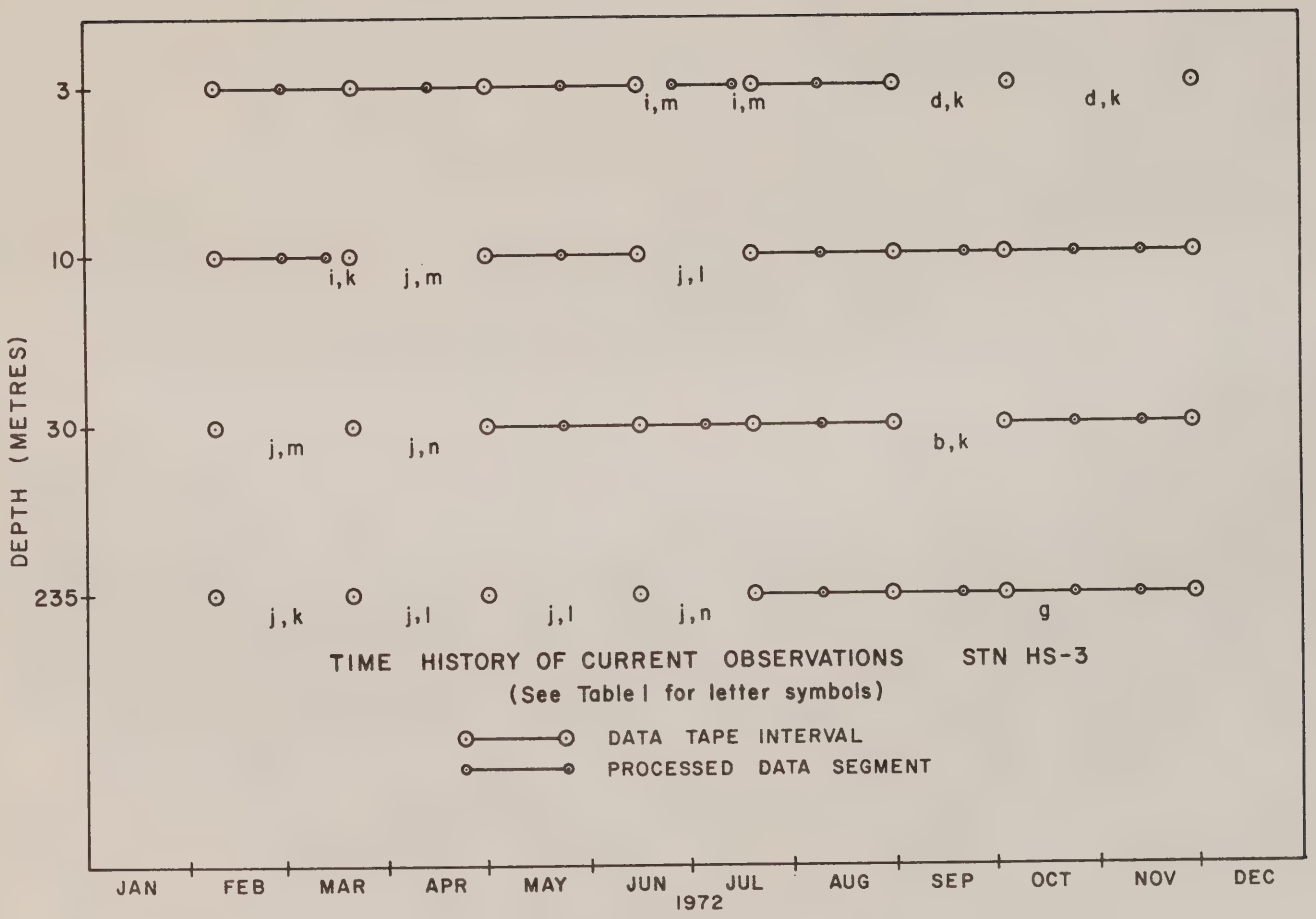
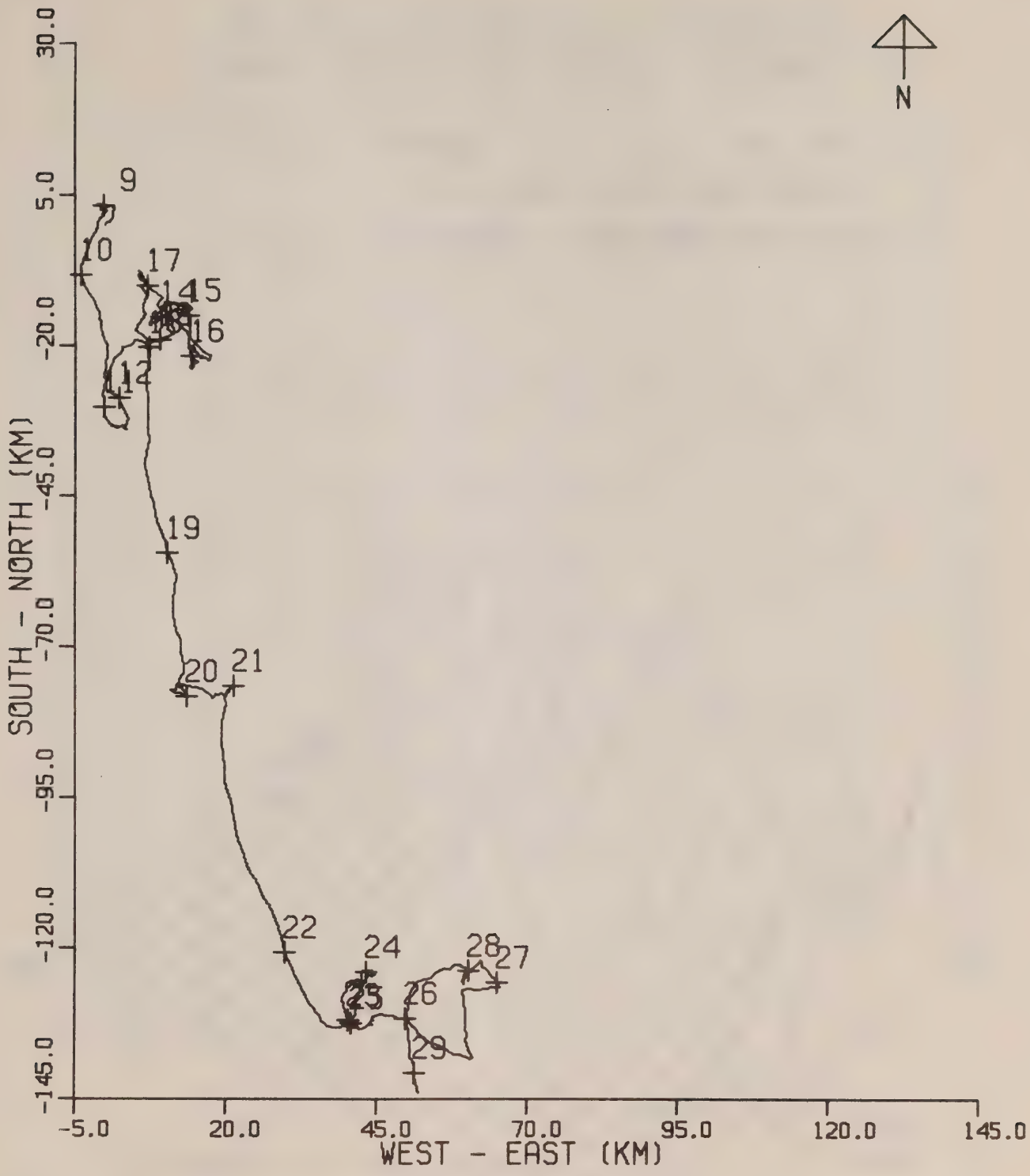

DEPTH (METRES)
3
10
30
235
i,m
i,m
d,k
d,k
i,k
j,m
j,l
j,m
j,n
b,k
j,k
j,l
j,l
j,n
g
TIME HISTORY OF CURRENT OBSERVATIONS STN HS-3
(See Table I for letter symbols)
DATA TAPE INTERVAL
PROCESSED DATA SEGMENT
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1972

Figure 3

DATA FOR 3-METRE DEPTH



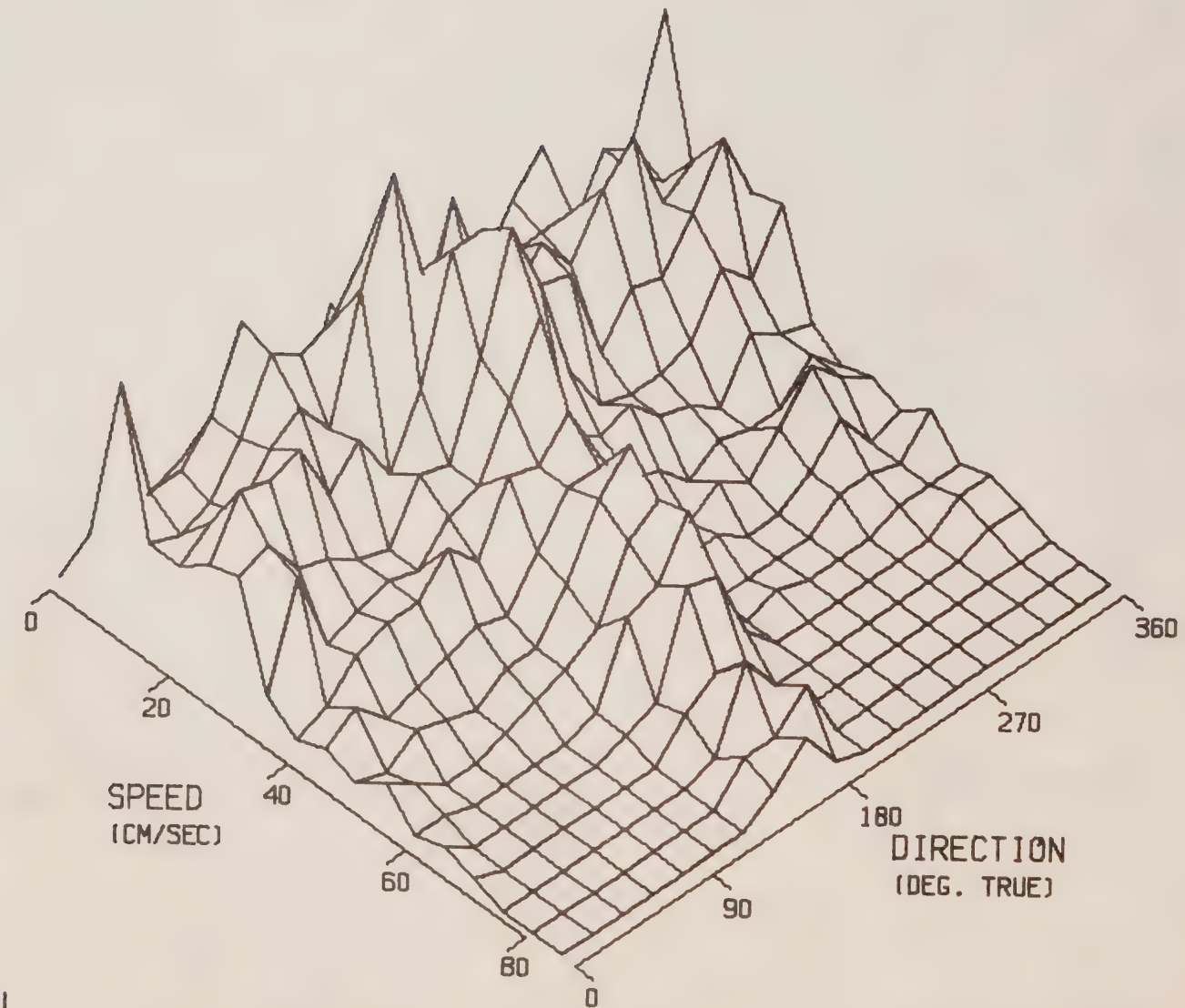
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 8/ 2/72 ENDING DATE: 29/ 2/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 8/ 2/72
NO. OF SAMPLES = 1994



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE: 8/ 2/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	007	021	011	013	006	009	003	002	001				73
15- 29	003	012	015	022	010	005	002	001					70
30- 44	006	012	012	015	005	004							54
45- 59	008	017	020	011	011	002	004						73
60- 74	005	016	012	016	007	005	001						62
75- 89	006	026	021	009	007	003	002						74
90-104	009	018	023	010	008	014	002						84
105-119	003	017	019	013	006	003	004	002					67
120-134	006	015	024	012	011	012	003		001				84
135-149	004	024	040	015	015	011	009	010	005	002	004		139
150-164	006	015	026	023	017	009	013	011	006	009	006	005	146
165-179	005	018	029	036	018	013	018	017	009	008	004	003	178
180-194	011	023	017	027	027	017	017	016	003	004			162
195-209	008	005	015	032	012	008	006		001				87
210-224	005	016	011	020	007	006	002						67
225-239	006	023	020	015	007	003	001	001					76
240-254	006	012	012	011	007	002	001						51
255-269	002	015	014	006	006	001							44
270-284	006	021	021	010	006	003							67
285-299	006	023	016	009	002	001		001					58
300-314	007	008	020	006	006	003	005						55
315-329	005	023	015	019	007	009	005	001					84
330-344	003	014	022	014	006	005	001	001	001				67
345-359	009	019	011	018	004	003	003	002	002				71
	142		446		218		102		29		14		1993
		413		382		151		65		23		8	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M, START DATE 08/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
11	12	1	***
33	24	1	******
55	52	3	**********
77	92	5	************************
99	113	6	*******************************
121	106	5	*****************************
143	123	6	**********************************
165	116	6	********************************
187	133	7	************************************
209	117	6	********************************
231	132	7	************************************
253	118	6	*********************************
275	119	6	*********************************
297	83	4	**********************
319	71	4	*******************
341	81	4	**********************
363	49	2	************
385	52	3	**************
407	44	2	**********
429	55	3	**************
451	34	2	*********
473	34	2	*********
495	27	1	*******
517	34	2	*********
539	19	1	*****
561	26	1	*******
583	16	1	****
605	17	1	****
627	20	1	*****
649	14	1	****
671	7	0	**
693	7	0	**
715	6	0	**
737	5	0	*
759	5	0	*
781	6	0	**
803	4	0	*
825	5	0	*
847	4	0	*
869	3	0	*

NO. OF SAMPLES OVER 880 = 9
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1994
SAMPLE INTERVAL = 15 MINUTES

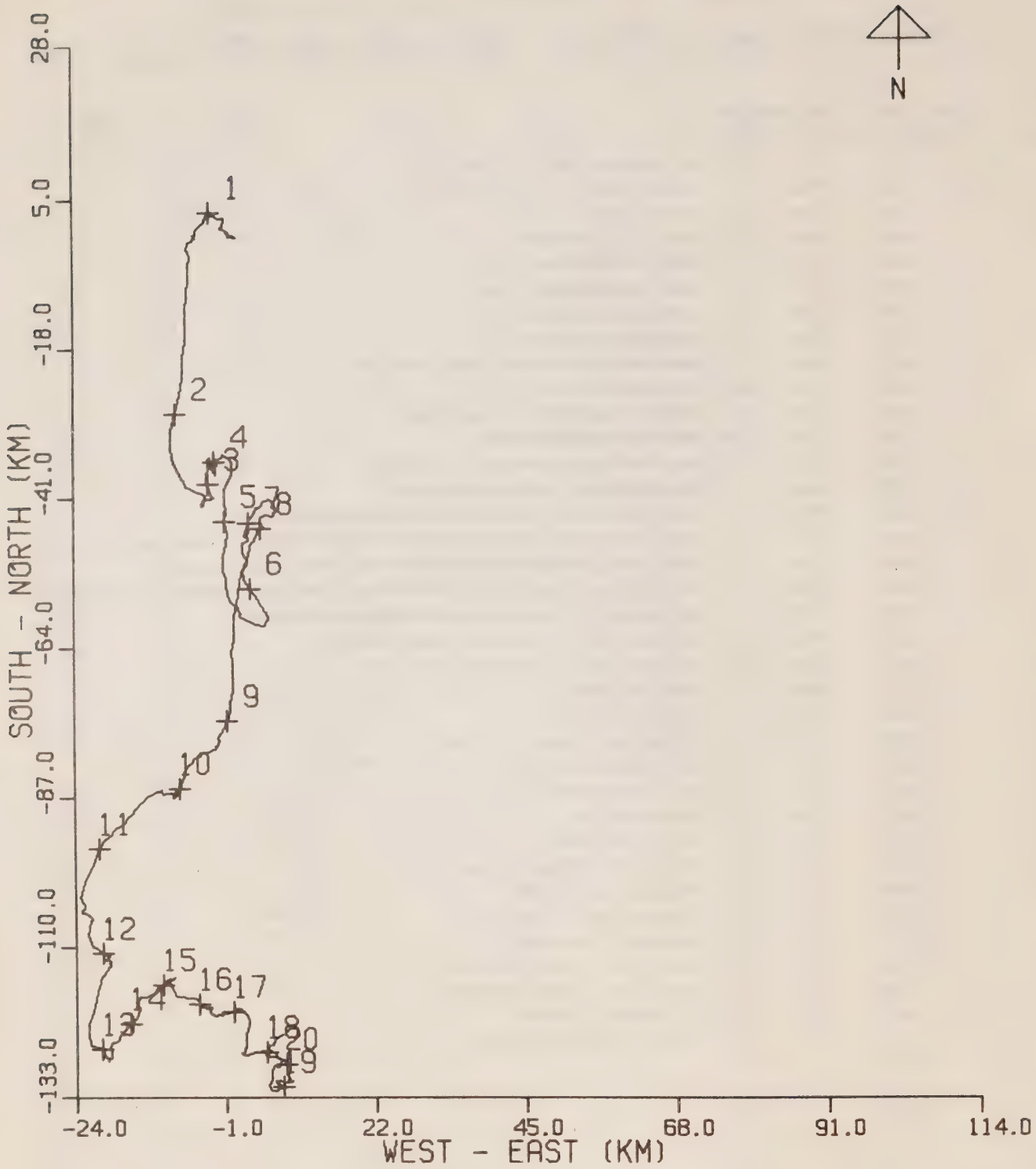
HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M. START DATE 08/02/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	49	2	**********
15	56	3	**********
25	38	2	**********
35	41	2	**********
45	40	2	**********
55	46	2	**********
65	49	2	**********
75	36	2	**********
85	68	3	**********
95	34	2	**********
105	56	3	**********
115	44	2	**********
125	67	3	**********
135	64	3	**********
145	92	5	**********
155	113	6	**********
165	109	5	**********
175	136	7	**********
185	93	5	**********
195	76	4	**********
205	47	2	**********
215	60	3	**********
225	33	2	**********
235	50	3	**********
245	37	2	**********
255	41	2	**********
265	26	1	**********
275	33	2	**********
285	47	2	**********
295	36	2	**********
305	45	2	**********
315	39	2	**********
325	55	3	**********
335	55	3	**********
345	37	2	**********
355	46	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1994
SAMPLE INTERVAL = 15 MINUTES

DTA/C.0+REJ;LIB 0=*T*



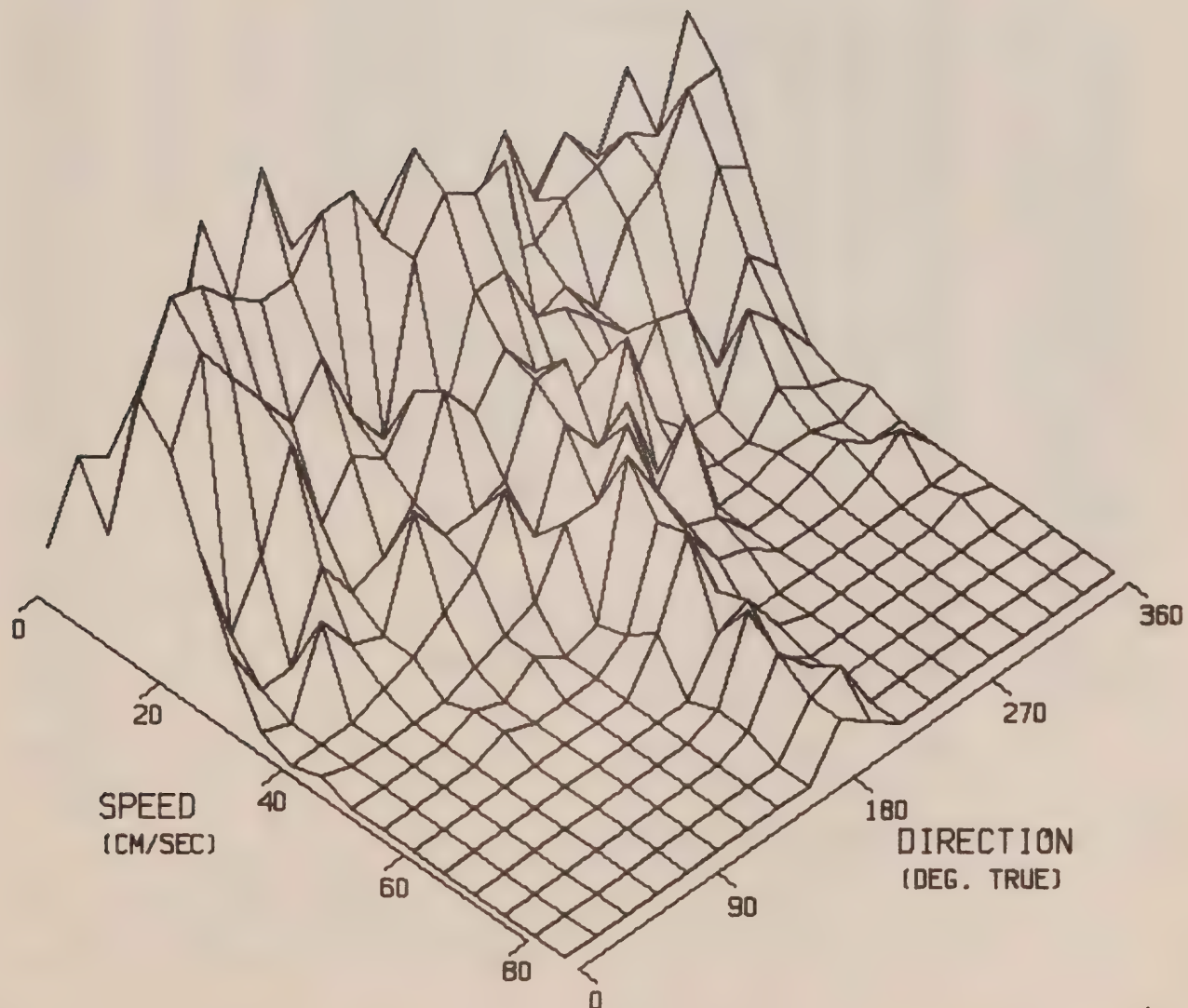
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 29/ 2/72 ENDING DATE: 20/ 3/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 29/ 2/72
NO. OF SAMPLES = 1955



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE:29/ 2/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
	000 TO	080 TO	160 TO	240 TO	320 TO	400 TO	480 TO	560 TO	640 TO	720 TO	800 TO	880 TO	
DIR	079	159	239	319	399	479	559	639	719	799	879	959	
0- 14	020	017	033	009	001	001							81
15- 29	009	030	023	002									64
30- 44	012	029	024	006	003								74
45- 59	015	033	029	006	006								89
60- 74	006	027	015	015	002	001							66
75- 89	012	033	016	009	001	001	002						74
90-104	017	050	018	011	009	003							108
105-119	010	025	018	011	006	002	001						73
120-134	012	033	013	011	009	004	001						83
135-149	014	034	018	017	013	009							105
150-164	013	017	027	005	013	009		003					87
165-179	010	021	031	018	012	009	008	013	006	002	001		131
180-194	012	027	039	022	019	018	018	006	007	013	006	001	188
195-209	003	024	026	016	015	010	008	007	002	003	003		117
210-224	007	010	025	014	008	007	005	001					77
225-239	009	017	017	016	012	009	006						86
240-254	005	015	010	007	006	004	001						48
255-269	013	015	016	007	004								55
270-284	009	022	011	011	001								54
285-299	010	018	009	011									48
300-314	008	015	013	005	002	001	001						45
315-329	009	019	017	005	010	001	003						64
330-344	007	019	019	015	005	001	003	001					70
345-359	011	022	023	010	002								68
	253	490		159		57		15		10			1955
	572		259		90		31		18		1		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M, START DATE 29/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
11	29	1	*******
33	47	2	**********
55	90	5	**********
77	143	7	**********
99	142	7	**********
121	161	8	**********
143	172	9	**********
165	167	9	**********
187	150	8	**********
209	120	6	**********
231	109	6	**********
253	84	4	**********
275	76	4	**********
297	54	3	**********
319	56	3	**********
341	53	3	**********
363	43	2	**********
385	31	2	********
407	36	2	*********
429	28	1	*******
451	16	1	****
473	19	1	*****
495	16	1	****
517	16	1	****
539	13	1	***
561	16	1	****
583	11	1	***
605	5	0	*
627	7	0	**
649	3	0	*
671	6	0	**
693	4	0	*
715	5	0	*
737	6	0	**
759	4	0	*
781	2	0	*
803	6	0	**
825	4	0	*
847	2	0	*
869	2	0	*

NO. OF SAMPLES OVER 880 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1955
SAMPLE INTERVAL = 15 MINUTES

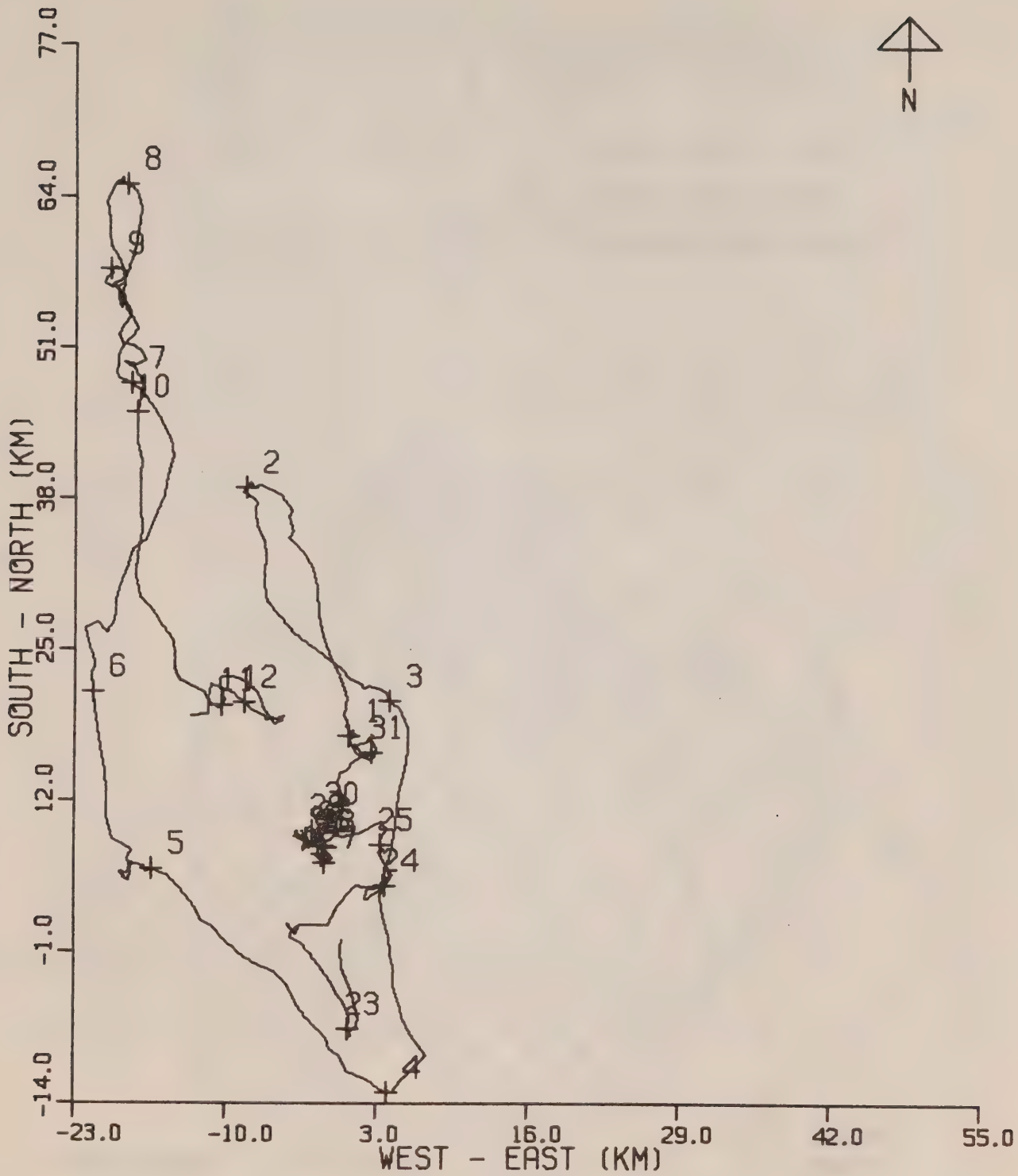
HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M, START DATE 29/02/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 1
5	48	2	**********
15	64	3	**********
25	33	2	**********
35	67	3	**********
45	36	2	**********
55	60	3	**********
65	61	3	**********
75	35	2	**********
85	54	3	**********
95	52	3	**********
105	73	4	**********
115	46	2	**********
125	66	3	**********
135	53	3	**********
145	69	4	**********
155	70	4	**********
165	54	3	**********
175	128	7	**********
185	93	5	**********
195	106	5	**********
205	72	4	**********
215	58	3	**********
225	48	2	**********
235	57	3	**********
245	43	2	**********
255	26	1	*********
265	44	2	**********
275	29	1	**********
285	31	2	**********
295	32	2	**********
305	37	2	**********
315	32	2	**********
325	40	2	**********
335	55	3	**********
345	40	2	**********
355	43	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1955
SAMPLE INTERVAL = 15 MINUTES

R DTA/C.0+REJ;LIB 0=*T*



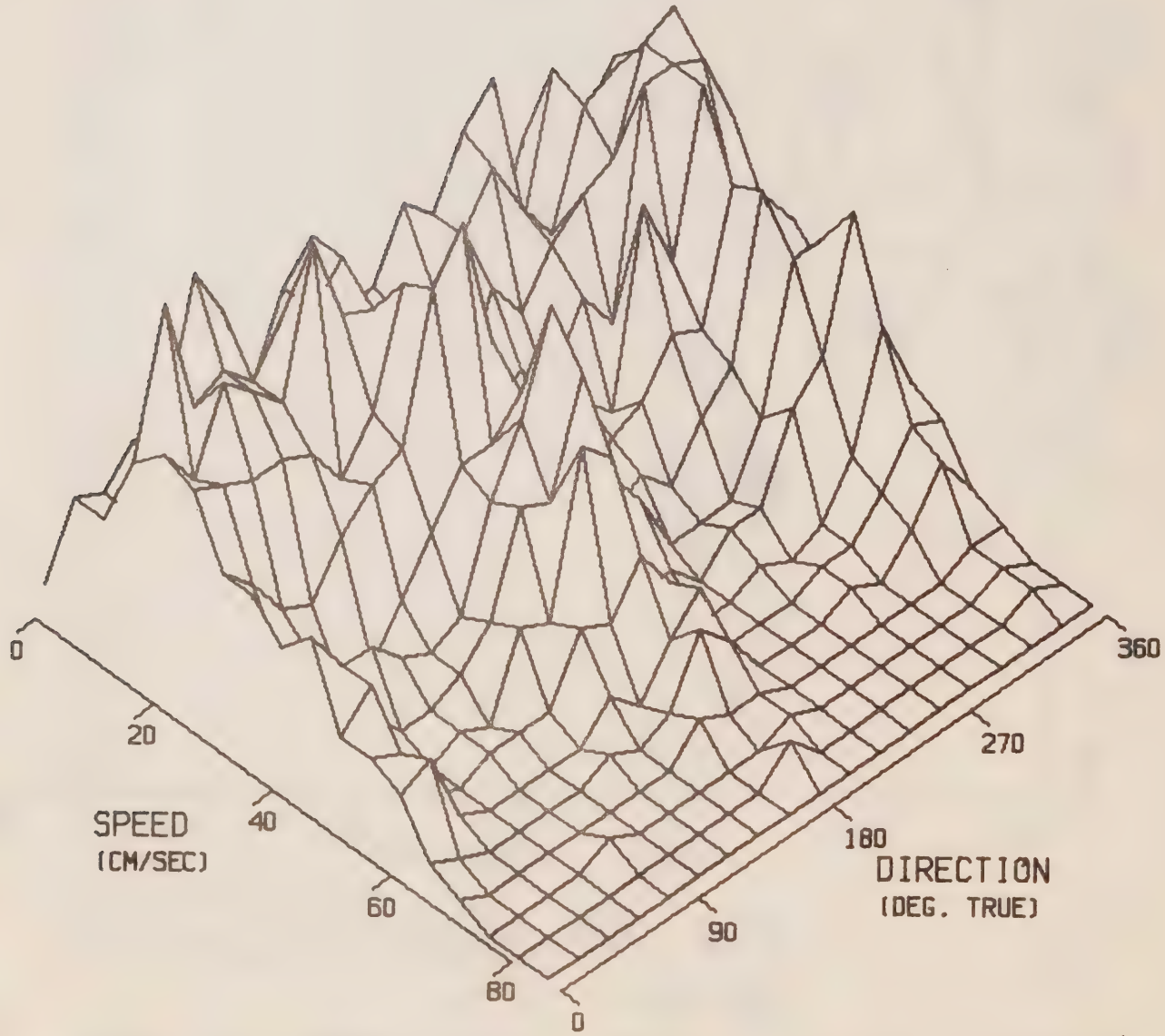
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 22/ 3/72 ENDING DATE: 12/ 4/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 22/ 3/72
NO. OF SAMPLES = 1996



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE:22/ 3/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	014	015	025	019	006	013	012	004	001				109
15- 29	005	019	013	012	006	005	008	005	001				74
30- 44	006	014	024	011	006	005	001	001					68
45- 59	008	020	020	007	003	002							60
60- 74	008	020	016	006	001	005							56
75- 89	007	018	019	010	003		001			001			59
90-104	007	021	020	013	003	001	001	001				001	68
105-119	008	023	022	017	005	003	001						79
120-134	010	019	015	014	008	007	006	001	001				81
135-149	007	017	030	026	012	015	005	002					114
150-164	008	018	014	018	014	013	010	001	001				97
165-179	013	012	017	022	021	016	014	001	002				118
180-194	005	013	012	013	016	019	009	006	006	002	001	001	103
195-209	011	016	007	010	009	004	003	006	002				68
210-224	002	013	016	005	005	004	001						46
225-239	015	019	010	010	007	002	001						64
240-254	007	023	014	003	003	001							51
255-269	004	022	017	006	006	004	002						61
270-284	009	014	015	012	010	003	001	002					66
285-299	011	015	016	021	014	003	004						84
300-314	006	020	019	018	007	006	007	001					84
315-329	007	015	035	029	022	024	008	006	001				147
330-344	010	022	021	017	016	014	020	005	003				128
345-359	006	014	022	014	017	016	008	008	003	002			110
	194	422	439	333	220	185	123	50	21	5	1	2	1995

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M. START DATE 22/03/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	30 60 90 120 150
10	22	1	*******
30	36	2	**********
50	54	3	**********
70	88	4	**********
90	96	5	**********
110	116	6	**********
130	100	5	**********
150	111	6	**********
170	106	5	**********
190	107	5	**********
210	109	5	**********
230	110	6	**********
250	85	4	**********
270	89	4	**********
290	95	5	**********
310	68	3	**********
330	68	3	**********
350	45	2	**********
370	53	3	**********
390	54	3	**********
410	48	2	**********
430	42	2	**********
450	52	3	**********
470	41	2	**********
490	33	2	**********
510	33	2	**********
530	39	2	**********
550	16	1	*****
570	16	1	*****
590	14	1	*****
610	13	1	****
630	7	0	**
650	8	0	***
670	7	0	**
690	3	0	*
710	3	0	*
730	0	0	
750	1	0	
770	3	0	*
790	1	0	

NO. OF SAMPLES OVER 800 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1996
SAMPLE INTERVAL = 15 MINUTES

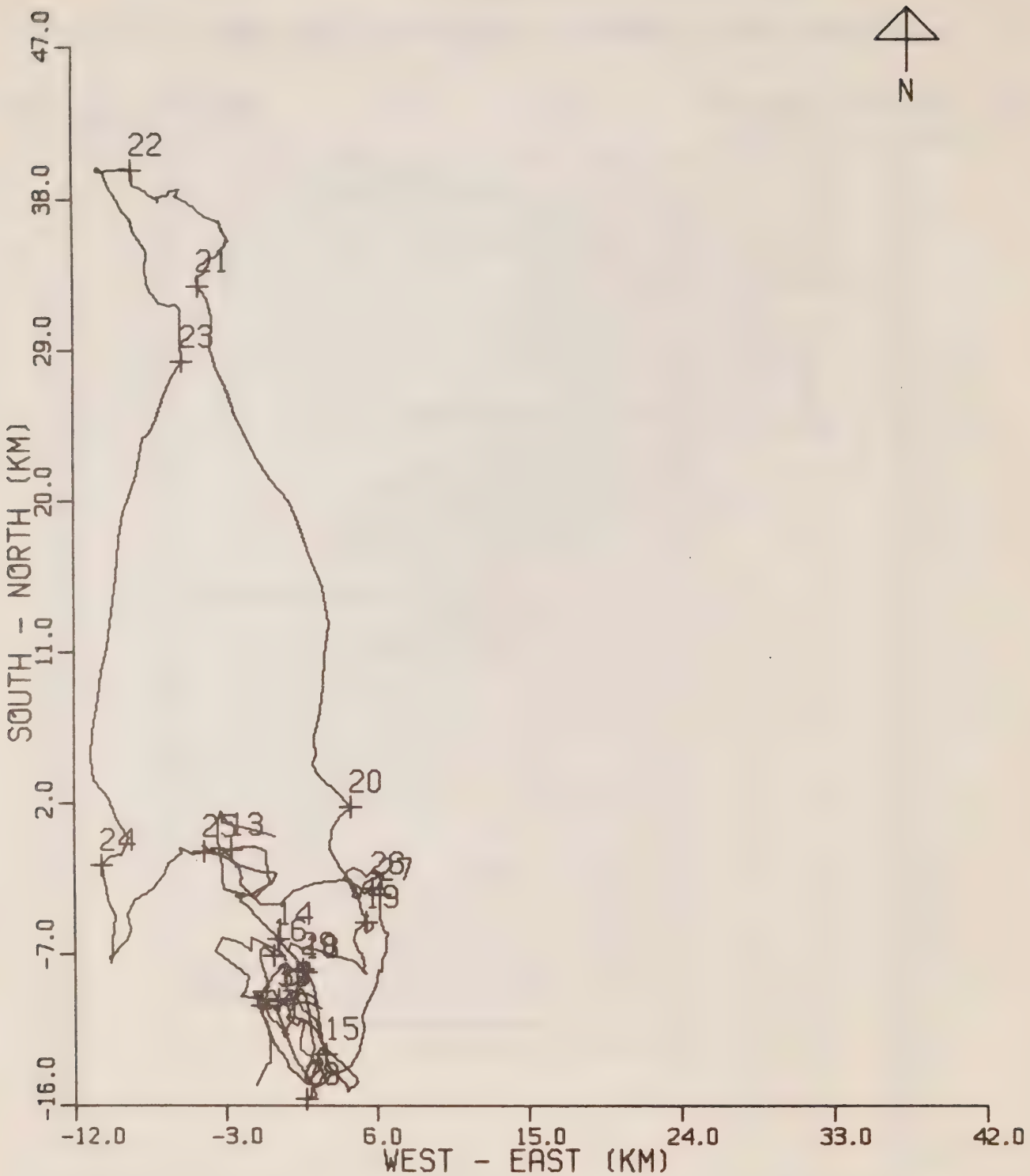
HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M. START DATE 22/03/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	71	4	**********
15	77	4	**********
25	35	2	**********
35	56	3	**********
45	33	2	**********
55	39	2	**********
65	44	2	**********
75	42	2	**********
85	41	2	**********
95	28	1	**********
105	60	3	**********
115	47	2	**********
125	58	3	**********
135	65	3	**********
145	72	4	**********
155	75	4	**********
165	61	3	**********
175	98	5	**********
185	54	3	**********
195	67	3	**********
205	32	2	**********
215	37	2	**********
225	36	2	**********
235	37	2	**********
245	41	2	**********
255	32	2	**********
265	46	2	**********
275	31	2	**********
285	51	3	**********
295	61	3	**********
305	64	3	**********
315	63	3	**********
325	104	5	**********
335	104	5	**********
345	78	4	**********
355	56	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1996
SAMPLE INTERVAL = 15 MINUTES

DTA/C.0+REJ:LIB 0=*T*



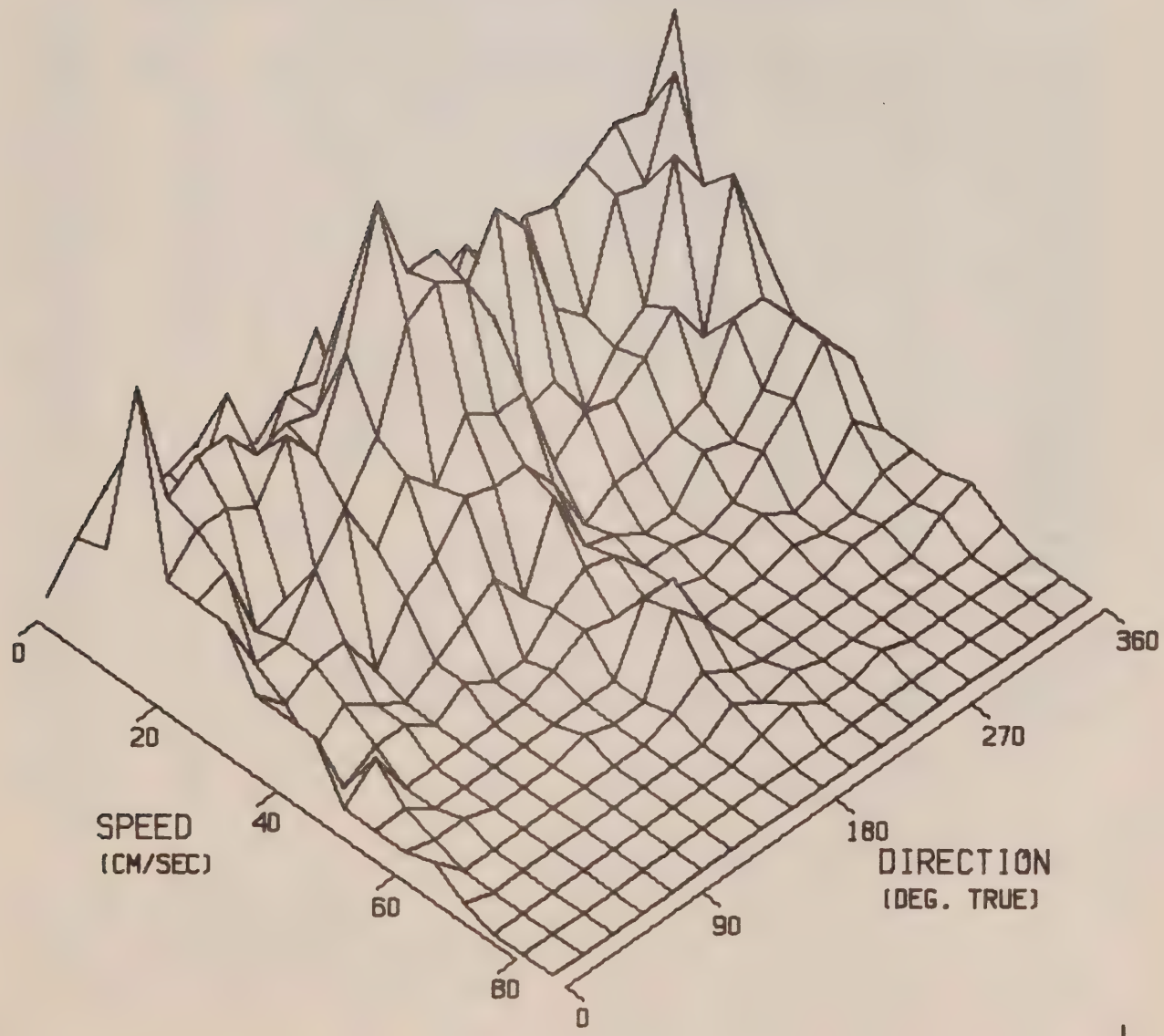
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 12/ 4/72 ENDING DATE: 1/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 12/ 4/72
NO. OF SAMPLES = 1832



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE:12/ 4/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	016	026	020	016	008	005	001	006	001				99
15- 29	011	020	015	009	004	001	006					001	67
30- 44	007	020	018	003	004			001					53
45- 59	007	020	011	011	008	005							62
60- 74	005	015	010	009	007	003							49
75- 89	011	023	014	011	002								61
90-104	006	011	019	012	005								53
105-119	009	009	025	020	013	002		001					79
120-134	004	022	023	012	010	003							74
135-149	008	016	051	026	009	003	001						114
150-164	012	013	025	027	011	001	002						91
165-179	008	017	031	029	010	007	002	002	002				108
180-194	008	015	031	017	016	007	008	011	003	002			118
195-209	007	013	022	019	007	003	003	003	001	001			79
210-224	007	018	024	009	003	001	001		001				64
225-239	007	010	022	011	001	002							53
240-254	014	019	020	006	003								62
255-269	006	013	015	004	003		001			001			43
270-284	007	020	017	013	007	002	002						68
285-299	008	017	016	012	005	001	001	001					61
300-314	005	018	023	017	008	004							75
315-329	009	020	031	015	011	011		001					98
330-344	006	018	024	023	013	017	003	002	001				107
345-359	008	015	029	017	012	005	004	002	002				94
	196		536		180		35		11		0		1832
		408		348		83		30		4		1	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M. START DATE 12/04/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 40 . 80 . 120 . 160 . 200 .
9	15	1	****
27	34	2	*********
45	60	3	**********
63	56	3	**********
81	75	4	**********
99	81	4	**********
117	80	4	**********
135	105	6	**********
153	125	7	**********
171	128	7	**********
189	131	7	**********
207	120	7	**********
225	113	6	**********
243	96	5	**********
261	76	4	**********
279	75	4	**********
297	76	4	**********
315	63	3	**********
333	45	2	**********
351	43	2	**********
369	39	2	**********
387	29	2	*******
405	24	1	******
423	19	1	*****
441	16	1	****
459	17	1	****
477	14	1	****
495	11	1	***
513	6	0	**
531	10	1	***
549	4	0	*
567	8	0	**
585	7	0	**
603	10	1	***
621	4	0	*
639	5	0	*
657	2	0	*
675	3	0	*
693	1	0	
711	1	0	

NO. OF SAMPLES OVER 720 = 5
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1832
SAMPLE INTERVAL = 15 MINUTES

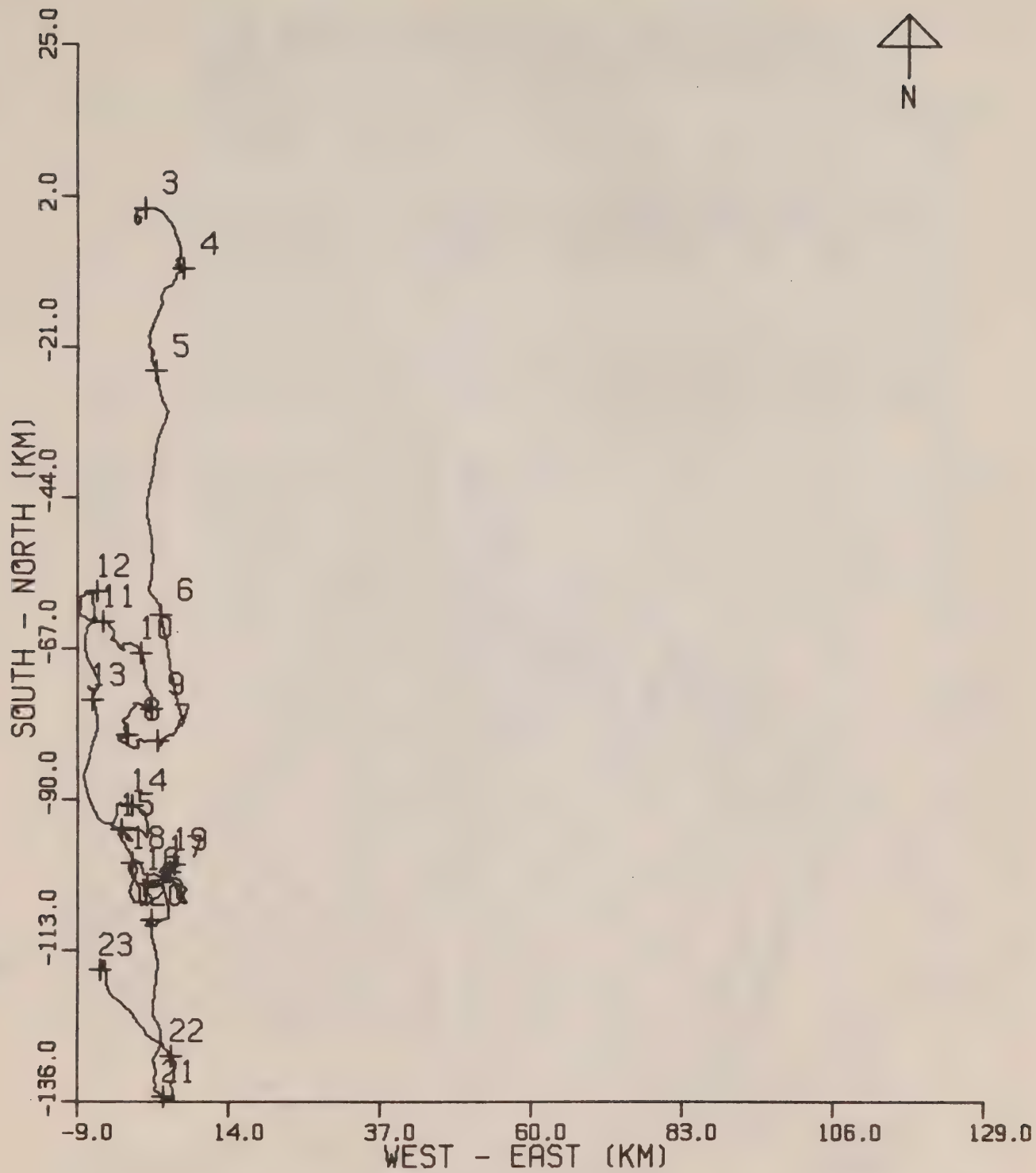
HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M. START DATE 12/04/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	20 40 60 80 100
5	67	4	**********
15	62	3	**********
25	37	2	**********
35	41	2	**********
45	33	2	**********
55	41	2	**********
65	38	2	**********
75	33	2	**********
85	50	3	**********
95	23	1	**********
105	51	3	**********
115	47	3	**********
125	53	3	**********
135	62	3	**********
145	73	4	**********
155	77	4	**********
165	52	3	**********
175	92	5	**********
185	54	3	**********
195	86	5	**********
205	35	2	**********
215	45	2	**********
225	32	2	**********
235	40	2	**********
245	48	3	**********
255	26	1	**********
265	42	2	**********
275	33	2	**********
285	40	2	**********
295	45	2	**********
305	51	3	**********
315	52	3	**********
325	70	4	**********
335	88	5	**********
345	61	3	**********
355	52	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1832
SAMPLE INTERVAL = 15 MINUTES

DTA/C.0+REJ:LIB 0=*T*



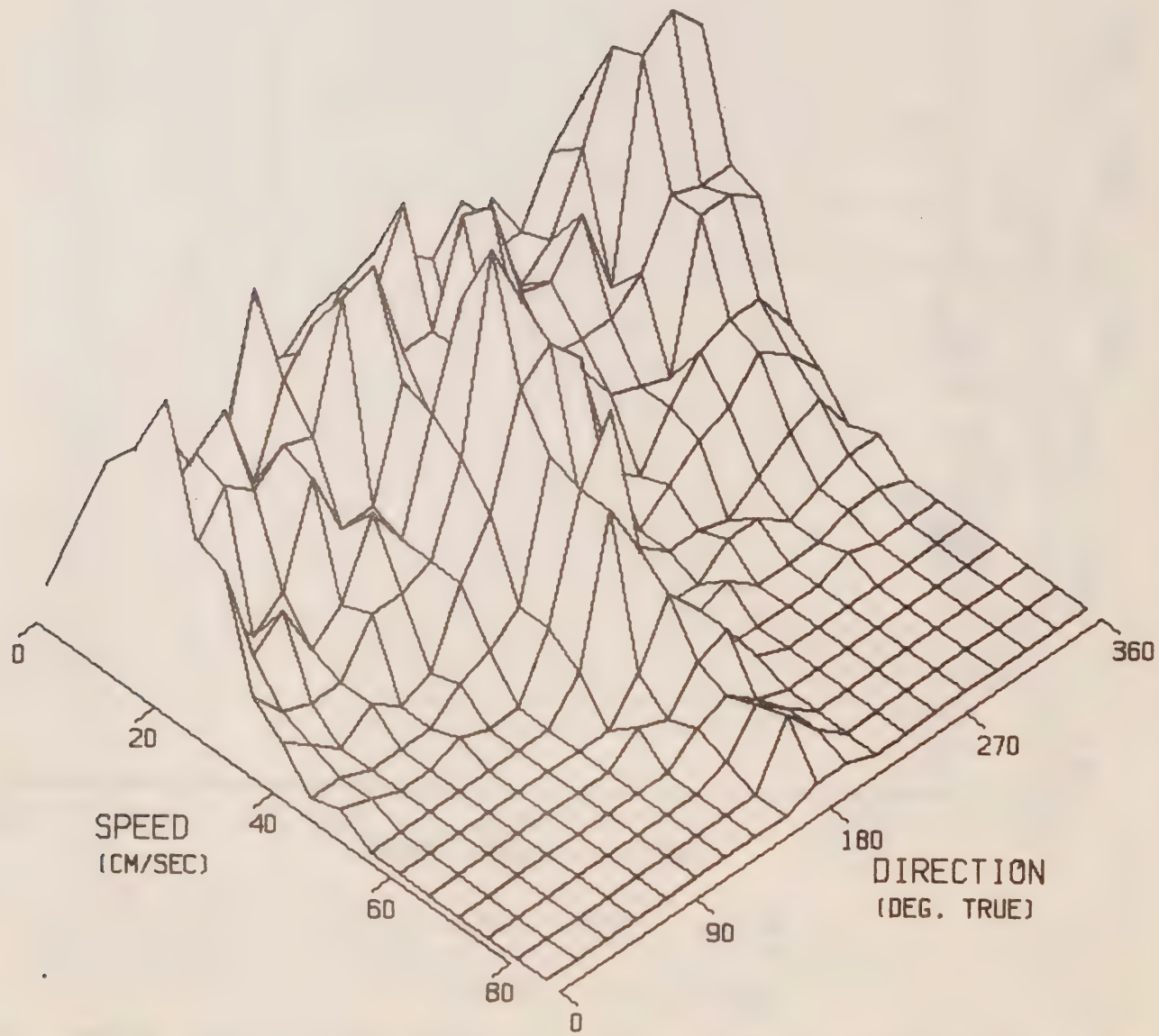
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 2/ 5/72 ENDING DATE: 23/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 2/ 5/72
NO. OF SAMPLES = 1997



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE: 2/ 5/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	011	027	027	013	011	002	002						93
15- 29	006	019	010	008	003	001							47
30- 44	005	012	014	009	002								42
45- 59	010	018	015	005	003								51
60- 74	009	014	015	005	003								46
75- 89	006	010	016	010	006		001						49
90-104	008	030	021	012	004	003							78
105-119	005	023	019	012	012	001							72
120-134	015	013	025	005	007	005							70
135-149	009	024	035	021	016	013	006	001	002				127
150-164	009	023	019	020	040	012	016	003	002	001			145
165-179	008	027	026	023	020	020	020	009	002	001	001		157
180-194	014	026	022	022	029	018	018	010	008	009	002		178
195-209	006	015	022	012	020	012	003	005	002	001	001		99
210-224	007	016	025	010	007	003		001					69
225-239	012	014	019	010	003	001	002						61
240-254	007	012	017	016	005	002	001						60
255-269	006	013	009	013	003	003	002						49
270-284	012	016	021	009	005	003	002						68
285-299	004	024	014	005	008			001					56
300-314	008	019	021	014	013	004		001					80
315-329	007	029	036	021	014	009							116
330-344	009	016	031	017	007	009	002						91
345-359	010	021	026	024	007	003	002						93
	203		505		248		77		16		4		1997
		461		316		124		31		12		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M, START DATE 02/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
10	14	1	****
30	47	2	**********
50	59	3	**************
70	87	4	**********************
90	96	5	************************
110	128	6	**********************************
130	108	5	**************************
150	129	6	**********************************
170	137	7	************************************
190	139	7	************************************
210	131	7	**********************************
230	99	5	************************
250	80	4	********************
270	75	4	********************
290	76	4	********************
310	86	4	**********************
330	69	3	*****************
350	59	3	**************
370	65	3	****************
390	55	3	**************
410	45	2	**********
430	30	2	********
450	24	1	******
470	21	1	*****
490	32	2	********
510	16	1	****
530	13	1	***
550	14	1	****
570	15	1	****
590	8	0	**
610	3	0	*
630	5	0	*
650	6	0	**
670	4	0	*
690	4	0	*
710	2	0	*
730	1	0	
750	3	0	*
770	3	0	*
790	5	0	*

NO. OF SAMPLES OVER 800 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1997
SAMPLE INTERVAL = 15 MINUTES

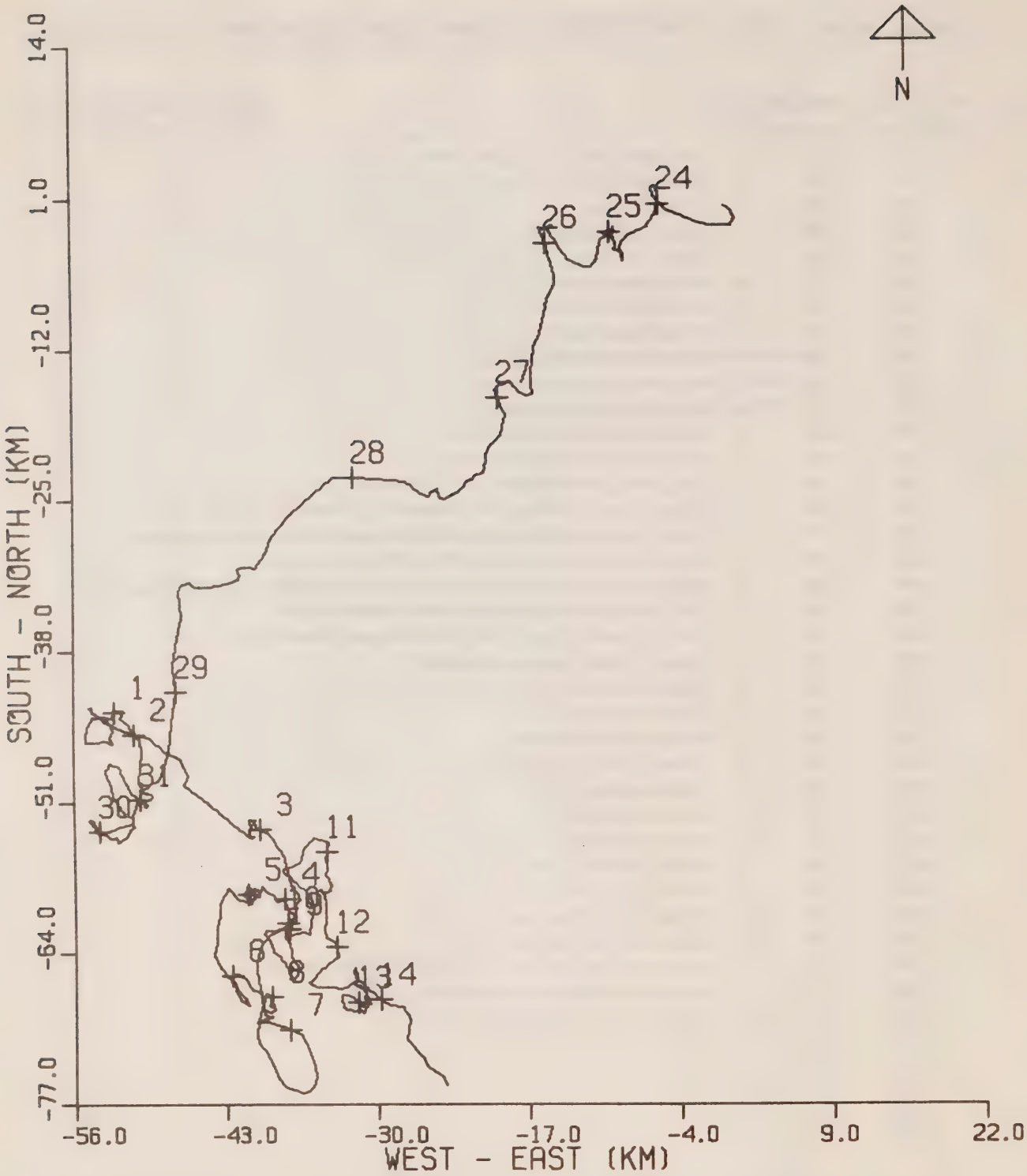
HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M. START DATE 02/05/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	72	4	**********
15	43	2	**********
25	25	1	********
35	29	1	**********
45	33	2	**********
55	31	2	**********
65	37	2	**********
75	30	2	**********
85	39	2	**********
95	49	2	**********
105	43	2	**********
115	47	2	**********
125	55	3	**********
135	44	2	**********
145	98	5	**********
155	118	6	**********
165	87	4	**********
175	130	7	**********
185	88	4	**********
195	99	5	**********
205	57	3	**********
215	61	3	**********
225	28	1	**********
235	41	2	**********
245	49	2	**********
255	33	2	**********
265	35	2	**********
275	31	2	**********
285	54	3	**********
295	31	2	**********
305	58	3	**********
315	55	3	**********
325	83	4	**********
335	73	4	**********
345	63	3	**********
355	48	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1997
SAMPLE INTERVAL = 15 MINUTES

R DTA/C.0+REJ;LIB 0=*T*



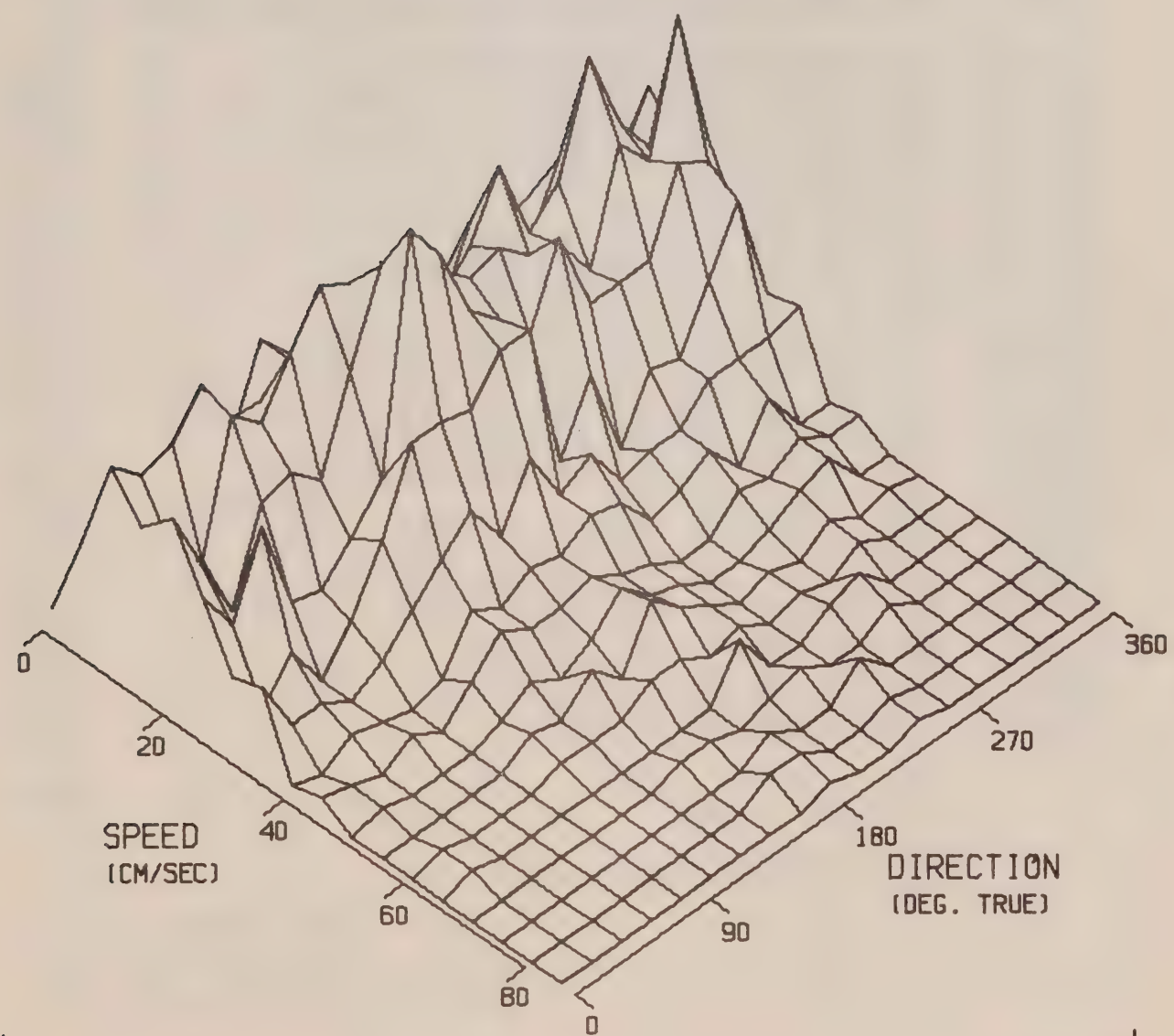
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 23/ 5/72 ENDING DATE: 14/ 6/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 23/ 5/72
NO. OF SAMPLES = 2130



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE:23/ 5/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
	000 TO	080 TO	160 TO	240 TO	320 TO	400 TO	480 TO	560 TO	640 TO	720 TO	800 TO	880 TO	
DIR	079	159	239	319	399	479	559	639	719	799	879	959	
0- 14	014	025	021	010	010	002	001	001					84
15- 29	006	018	014	006	001	001			001				47
30- 44	012	014	011	014	003	001							55
45- 59	008	028	009	006	002	001							54
60- 74	004	021	020	004		002							51
75- 89	013	019	020	006	003								61
90-104	013	023	027	012	007	002	001						85
105-119	011	022	015	012	008	003	005	002					78
120-134	013	030	030	030	013	008	002						126
135-149	018	021	044	043	012	004	003	001	001				147
150-164	013	017	023	034	006	004	002	002	001				102
165-179	011	021	030	019	011	008	004	003			003		110
180-194	011	026	038	034	018	007	006	003	002	004	001		150
195-209	009	019	021	024	007	004	006	002	003				95
210-224	004	016	027	015	007	006	004	002	001	001			83
225-239	007	027	024	018	009					002	001		88
240-254	012	024	029	020	005	001		001		002			94
255-269	007	021	020	006	003	002		001	001				61
270-284	012	021	017	020	005	005	002	001	003				86
285-299	011	027	027	011	005	002		002		001			86
300-314	009	024	038	013	007	004	006						101
315-329	010	023	038	024	012	003	003						113
330-344	002	020	034	023	004	001		001					85
345-359	011	018	030	020	008	001							88
	241		607		166		45		13		5		2130
		525		424		72		22		10		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M, START DATE 23/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
10	13	1	***
30	50	2	**********
50	81	4	**********
70	104	5	**********
90	132	6	**********
110	115	5	**********
130	140	7	**********
150	145	7	**********
170	162	8	**********
190	158	7	**********
210	141	7	**********
230	142	7	**********
250	133	6	**********
270	114	5	**********
290	83	4	**********
310	86	4	**********
330	51	2	**********
350	57	3	**********
370	30	1	******
390	26	1	*****
410	23	1	*****
430	17	1	***
450	15	1	***
470	17	1	***
490	14	1	***
510	9	0	**
530	16	1	***
550	8	0	**
570	4	0	*
590	8	0	**
610	5	0	*
630	3	0	*
650	5	0	*
670	4	0	*
690	2	0	
710	3	0	*
730	6	0	*
750	1	0	
770	1	0	
790	1	0	

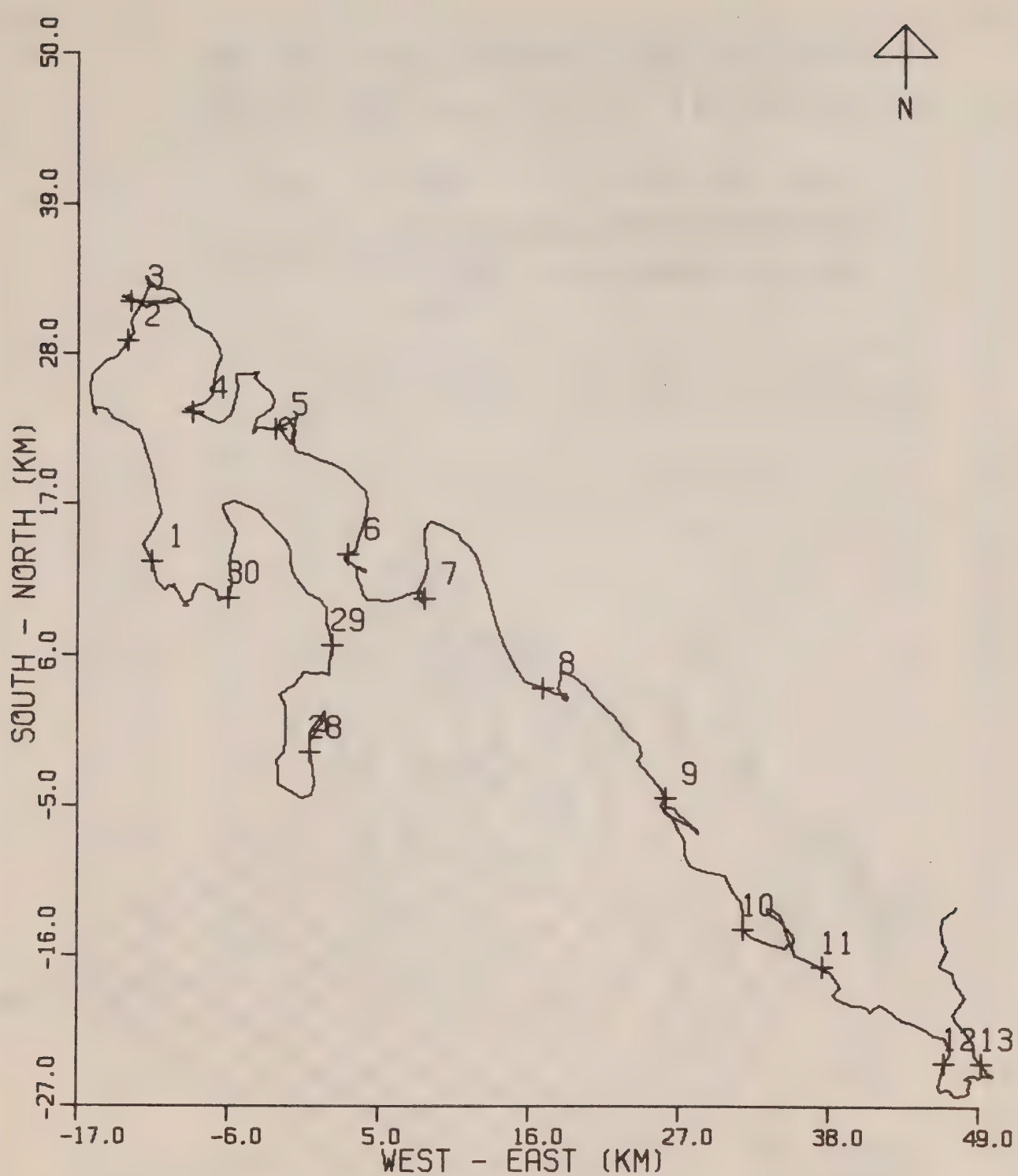
NO. OF SAMPLES OVER 800 = 5
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2130
SAMPLE INTERVAL = 15 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M, START DATE 23/05/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	61	3	**********
15	48	2	********
25	22	1	****
35	43	2	********
45	30	1	******
55	36	2	*******
65	45	2	********
75	25	1	*****
85	55	3	**********
95	43	2	********
105	58	3	**********
115	49	2	********
125	99	5	**********
135	75	4	**********
145	99	5	**********
155	80	4	**********
165	65	3	**********
175	97	5	**********
185	79	4	**********
195	85	4	**********
205	51	2	**********
215	68	3	**********
225	44	2	********
235	59	3	**********
245	73	3	**********
255	47	2	********
265	47	2	********
275	43	2	********
285	67	3	**********
295	50	2	**********
305	85	4	**********
315	55	3	**********
325	74	3	**********
335	67	3	**********
345	62	3	**********
355	44	2	********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2130
SAMPLE INTERVAL = 15 MINUTES



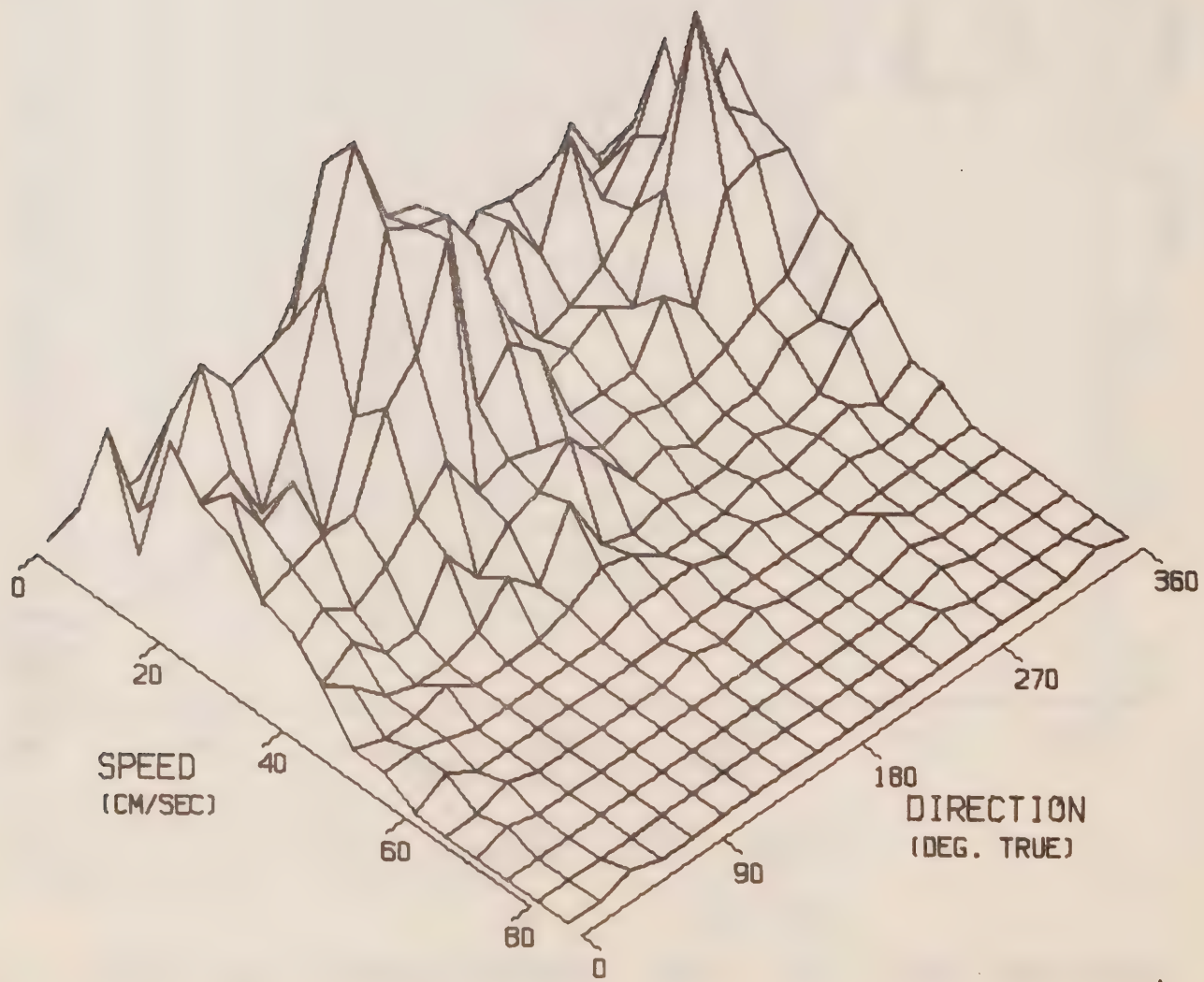
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 27/ 6/72 ENDING DATE: 13/ 7/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3M.
STARTING DATE: 28/ 6/72
NO. OF SAMPLES = 1521



STN. NO. HS-3 DEPTH 3M.

STARTING DATE:28/ 6/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	005	016	020	028	009	003	003						84
15- 29	006	011	010	007	001	006	001	002	001				45
30- 44	002	021	014	010	003	003	001	001			001		56
45- 59	009	019	018	008	005	001	001		001				62
60- 74	005	012	010	015	002	001	001					001	47
75- 89	004	010	010	004	005							001	34
90-104	005	019	032	016	013	001							86
105-119	006	023	030	024	008	003							94
120-134	007	022	039	036	008	004							116
135-149	010	021	041	038	008	004	001					001	124
150-164	007	013	031	026	006	010	004						97
165-179	005	013	017	013	013	004	002		001				68
180-194	006	006	023	020	012	005	001						73
195-209	009	022	014	004	005				001				55
210-224	001	010	008	003	004	001							27
225-239	004	016	009	003	003	001							36
240-254	003	011	004	003	002	001	001						25
255-269	003	013	006	007	001		001			001			32
270-284	005	016	010	012	001			001		001		001	47
285-299	005	012	012	005	003	001	001		002				41
300-314	006	010	017	016	004			001					54
315-329	008	015	019	030	006	003	002					001	84
330-344	006	004	011	021	005	006					001		54
345-359	005	011	024	011	012	007	001	001					72
	132		429		139		21		6		2		1513
		346		360		65		6		2		5	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 8

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M, START DATE 27/06/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	30 . . 60 . . 90 . . 120 . . 150
10	12	1	****
30	22	1	*******
50	44	3	**********
70	53	3	**********
90	68	4	**********
110	92	6	**********
130	79	5	**********
150	108	7	**********
170	112	7	**********
190	105	7	**********
210	100	7	**********
230	102	7	**********
250	102	7	**********
270	95	6	**********
290	83	5	**********
310	72	5	**********
330	50	3	**********
350	32	2	**********
370	25	2	********
390	31	2	**********
410	25	2	********
430	15	1	*****
450	10	1	***
470	15	1	*****
490	8	1	***
510	6	0	**
530	2	0	*
550	6	0	**
570	7	0	**
590	1	0	
610	1	0	
630	2	0	*
650	3	0	*
670	1	0	
690	3	0	*
710	0	0	
730	1	0	
750	1	0	
770	3	0	*
790	1	0	

NO. OF SAMPLES OVER 800 = 23
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1521
SAMPLE INTERVAL = 15 MINUTES

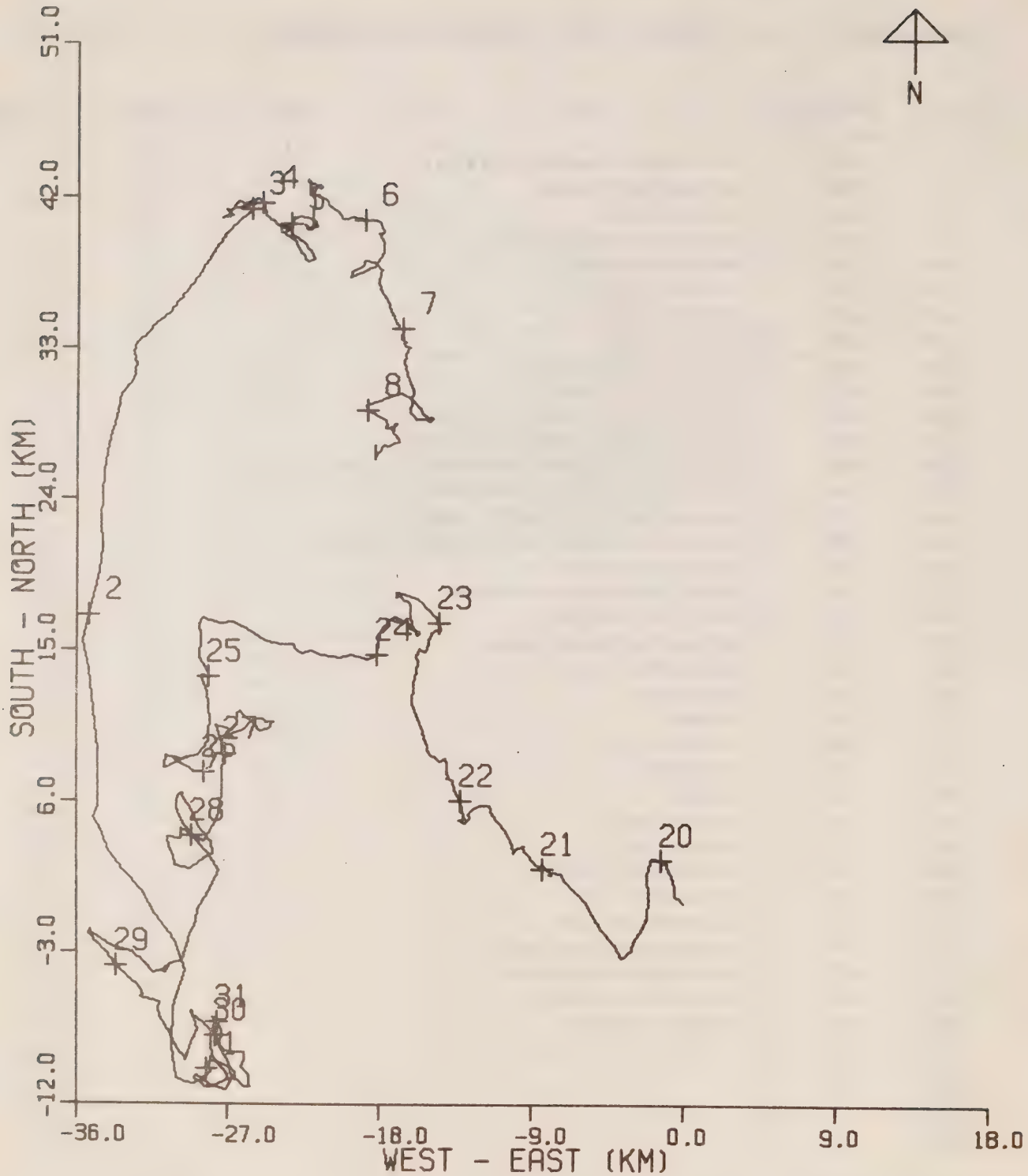
HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M, START DATE 27/06/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 30 60 90 120 150 . . . . .
5	62	4	**********
15	38	2	**********
25	26	2	*********
35	47	3	**********
45	33	2	**********
55	37	2	**********
65	28	2	*********
75	27	2	*********
85	44	3	**********
95	41	3	**********
105	65	4	**********
115	64	4	**********
125	96	6	**********
135	74	5	**********
145	71	5	**********
155	85	6	**********
165	37	2	**********
175	56	4	**********
185	37	2	**********
195	52	3	**********
205	36	2	**********
215	21	1	*******
225	14	1	*****
235	29	2	**********
245	22	1	*******
255	15	1	*****
265	26	2	*********
275	25	2	********
285	37	2	**********
295	20	1	*******
305	37	2	**********
315	49	3	**********
325	49	3	**********
335	42	3	**********
345	35	2	**********
355	44	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1521
SAMPLE INTERVAL = 15 MINUTES

0C1 RELEASED.



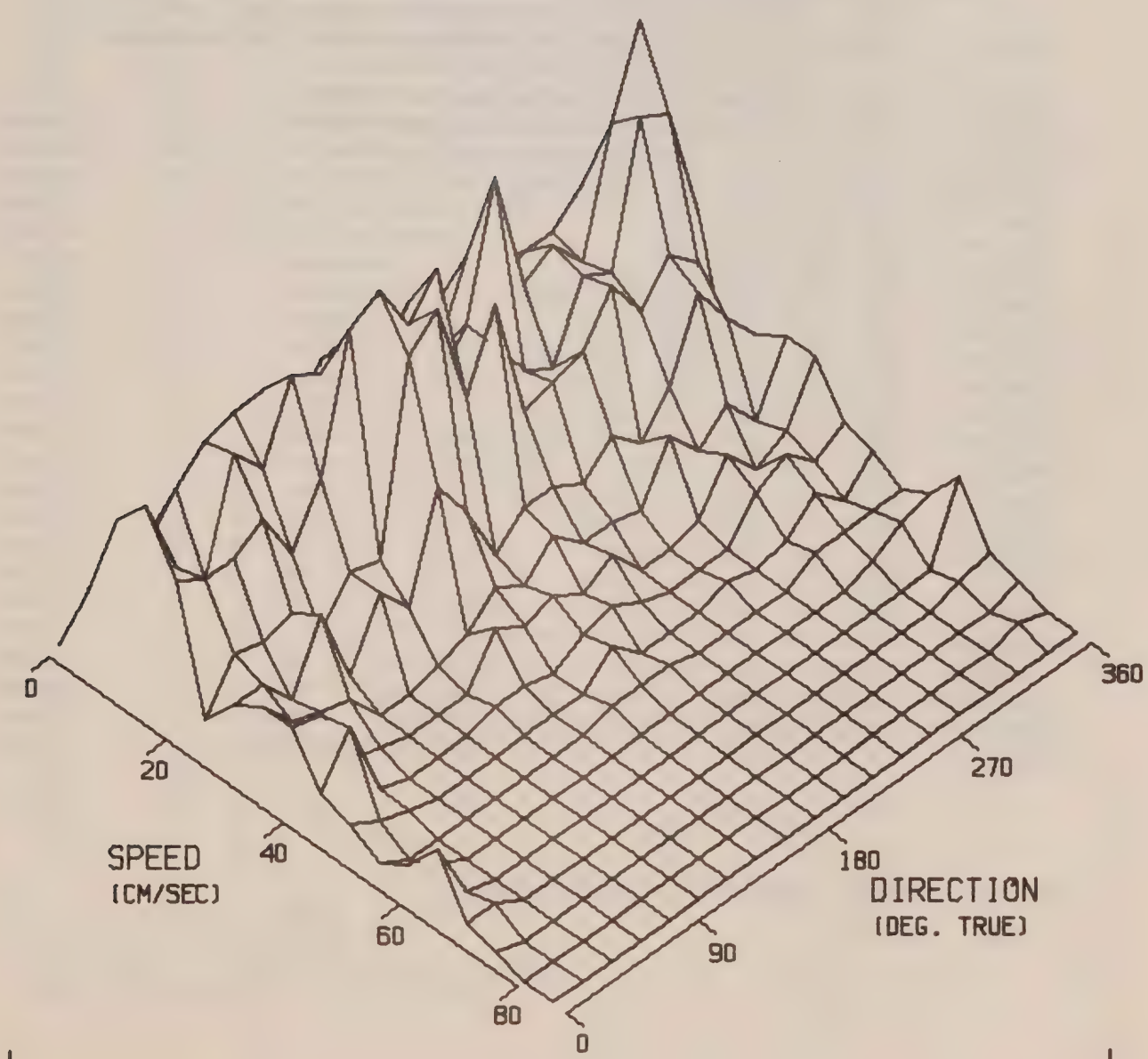
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 19/ 7/72 ENDING DATE: 8/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 19/ 7/72
NO. OF SAMPLES = 1922



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE:19/ 7/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	008	030	020	009	012	013	004	005	003				104
15- 29	008	016	013	011	007	009	001	002	002				69
30- 44	012	016	018	006	004	001	001						58
45- 59	010	023	011	014	009	001							68
60- 74	008	029	015	007									59
75- 89	005	028	010	004									47
90-104	010	034	021	011	001								77
105-119	010	022	021	006		001							60
120-134	007	019	034	007	001								68
135-149	007	035	043	030	008	002							125
150-164	005	026	031	023	007		001						93
165-179	007	025	026	014	004	003							79
180-194	009	031	041	015	006	003	003						108
195-209	004	012	019	018	003	003	001						60
210-224	010	013	022	011	005	003							64
225-239	011	030	022	010	002								75
240-254	011	021	021	010	001								64
255-269	011	017	021	013	003								65
270-284	013	026	025	013	007		001						85
285-299	015	017	014	013	006	003							68
300-314	007	019	035	016	007	005	002	001					92
315-329	012	033	036	024	005	008	006	001					125
330-344	011	036	031	015	004	005	002	001		001			106
345-359	013	027	025	011	009	004	002	004	007	001			103
	224		575		111		24		12		0		1922
		585		311		64		14		2		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M, START DATE 19/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 40 80 120 160 200 . . . . .
9	22	1	******
27	37	2	*********
45	54	3	**********
63	67	3	**********
81	100	5	**********
99	149	8	**********
117	105	5	**********
135	142	7	**********
153	163	8	**********
171	119	6	**********
189	140	7	**********
207	128	7	**********
225	122	6	**********
243	103	5	**********
261	86	4	**********
279	68	4	**********
297	59	3	**********
315	41	2	**********
333	26	1	*******
351	26	1	*******
369	25	1	******
387	22	1	******
405	19	1	*****
423	11	1	***
441	10	1	***
459	17	1	****
477	11	1	***
495	8	0	**
513	5	0	*
531	6	0	**
549	3	0	*
567	2	0	*
585	4	0	*
603	2	0	*
621	5	0	*
639	3	0	*
657	2	0	*
675	4	0	*
693	1	0	
711	3	0	*

NO. OF SAMPLES OVER 720 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1922
SAMPLE INTERVAL = 15 MINUTES

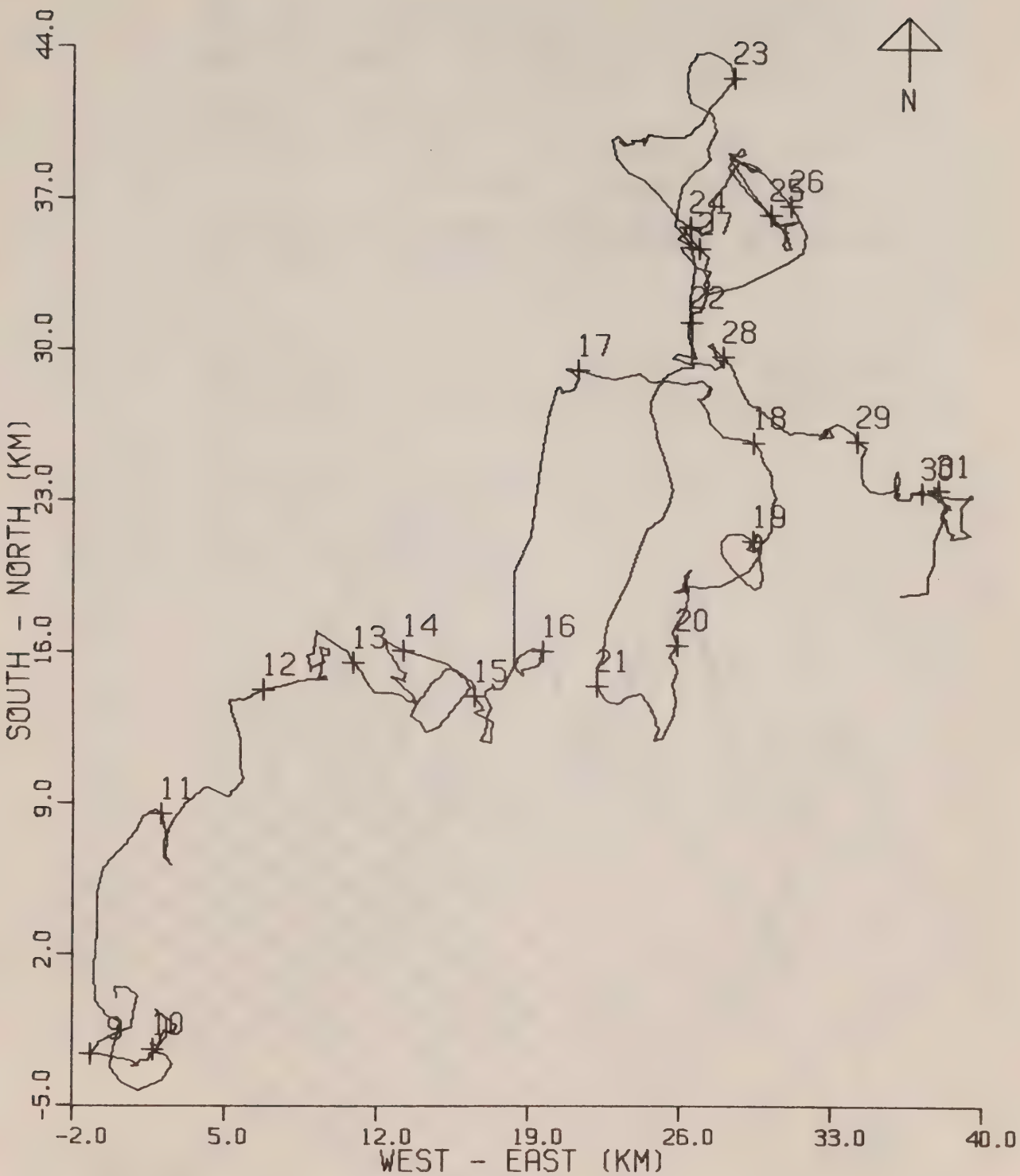
HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 3M. START DATE 19/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	20 40 60 80 100
5	70	4	**********
15	74	4	**********
25	29	2	*******
35	50	3	**********
45	25	1	******
55	51	3	**********
65	46	2	**********
75	27	1	*******
85	39	2	**********
95	41	2	**********
105	50	3	**********
115	40	2	**********
125	56	3	**********
135	64	3	**********
145	73	4	**********
155	70	4	**********
165	56	3	**********
175	68	4	**********
185	52	3	**********
195	52	3	**********
205	42	2	**********
215	51	3	**********
225	37	2	**********
235	51	3	**********
245	54	3	**********
255	32	2	**********
265	51	3	**********
275	42	2	**********
285	63	3	**********
295	40	2	**********
305	67	3	**********
315	77	4	**********
325	73	4	**********
335	85	4	**********
345	67	3	**********
355	57	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1922
SAMPLE INTERVAL = 15 MINUTES

$R DTA/C.O+REJ;LIB 0=*T*



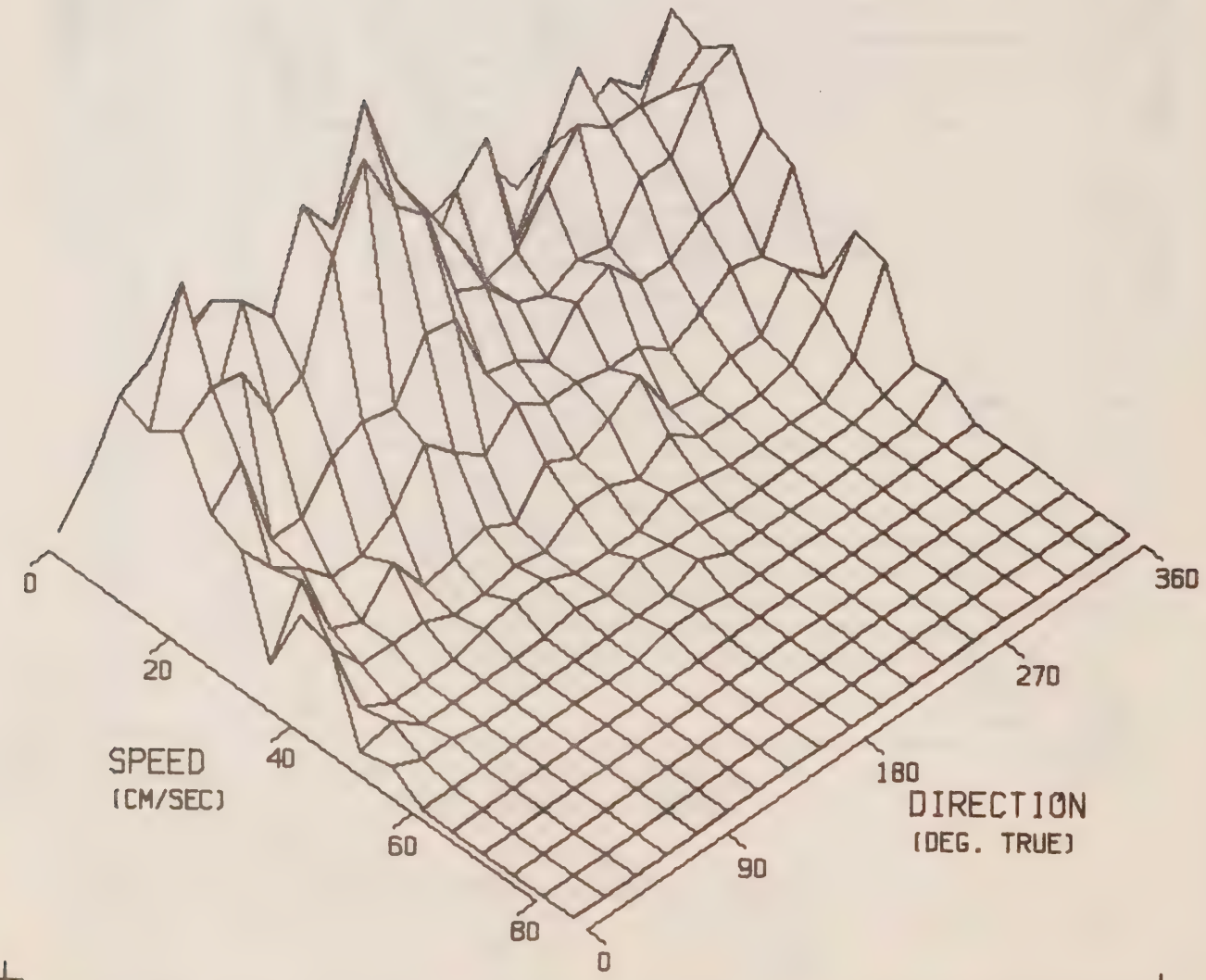
STN. NO. HS-3

DEPTH 3 M.

STARTING DATE: 8/ 8/72 ENDING DATE: 31/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 3 M.
STARTING DATE: 8/ 8/72
NO. OF SAMPLES = 2187



STN. NO. HS-3 DEPTH 3 M.

STARTING DATE: 8/ 8/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED											
	000 TO	080 TO	160 TO	240 TO	320 TO	400 TO	480 TO	560 TO	640 TO	720 TO	800 TO	880 TO	
DIR	079	159	239	319	399	479	559	639	719	799	879	959	
0- 14	015	043	031	021	018	018	006						152
15- 29	011	042	037	018	008	004		001					121
30- 44	012	028	030	014	005		001						90
45- 59	023	038	028	005	002								96
60- 74	015	031	024	006	005								81
75- 89	012	025	028	010	008								83
90-104	011	043	042	015									111
105-119	013	032	041	012	002	002							102
120-134	008	028	048	019	003	002							108
135-149	020	047	054	023	003	003							150
150-164	009	029	034	014	001			001					88
165-179	010	032	034	013	006		001						96
180-194	019	026	029	018	007	001	002	001					103
195-209	008	017	015	010	003	001	002						56
210-224	013	017	012	008	004	002							56
225-239	015	034	020	010	007	001	001						88
240-254	014	011	020	010	007	003							65
255-269	010	018	017	012	003								60
270-284	012	023	011	009	002								57
285-299	012	035	025	006	003								81
300-314	009	021	026	013	005								74
315-329	015	021	022	016	003	001							78
330-344	012	025	028	013	009	004							91
345-359	012	026	023	021	008	007	002						99
	310		679		122		15		0		0		2186
		692		316		49		3		0		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 3M, START DATE 08/08/72

MEDIAN (MM/S)	FREQUNCY NO.	PCT	. 50 100 150 200 250 . . . . .
8	21	1	****
24	41	2	********
40	59	3	**********
56	91	4	**********
72	104	5	**********
88	110	5	**********
104	143	7	**********
120	133	6	**********
136	157	7	**********
152	148	7	**********
168	167	8	**********
184	144	7	**********
200	145	7	**********
216	119	5	**********
232	104	5	**********
248	83	4	**********
264	66	3	**********
280	56	3	**********
296	59	3	**********
312	47	2	**********
328	37	2	*******
344	29	1	******
360	16	1	***
376	25	1	*****
392	16	1	***
408	11	1	**
424	12	1	**
440	7	0	*
456	9	0	**
472	9	0	**
488	6	0	*
504	2	0	
520	1	0	
536	2	0	
552	5	0	*
568	0	0	
584	1	0	
600	0	0	
616	1	0	
632	0	0	

NO. OF SAMPLES OVER 640 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2187
SAMPLE INTERVAL = 15 MINUTES
TOC2 RELEASED.

HISTOGRAM OF DIRECTION

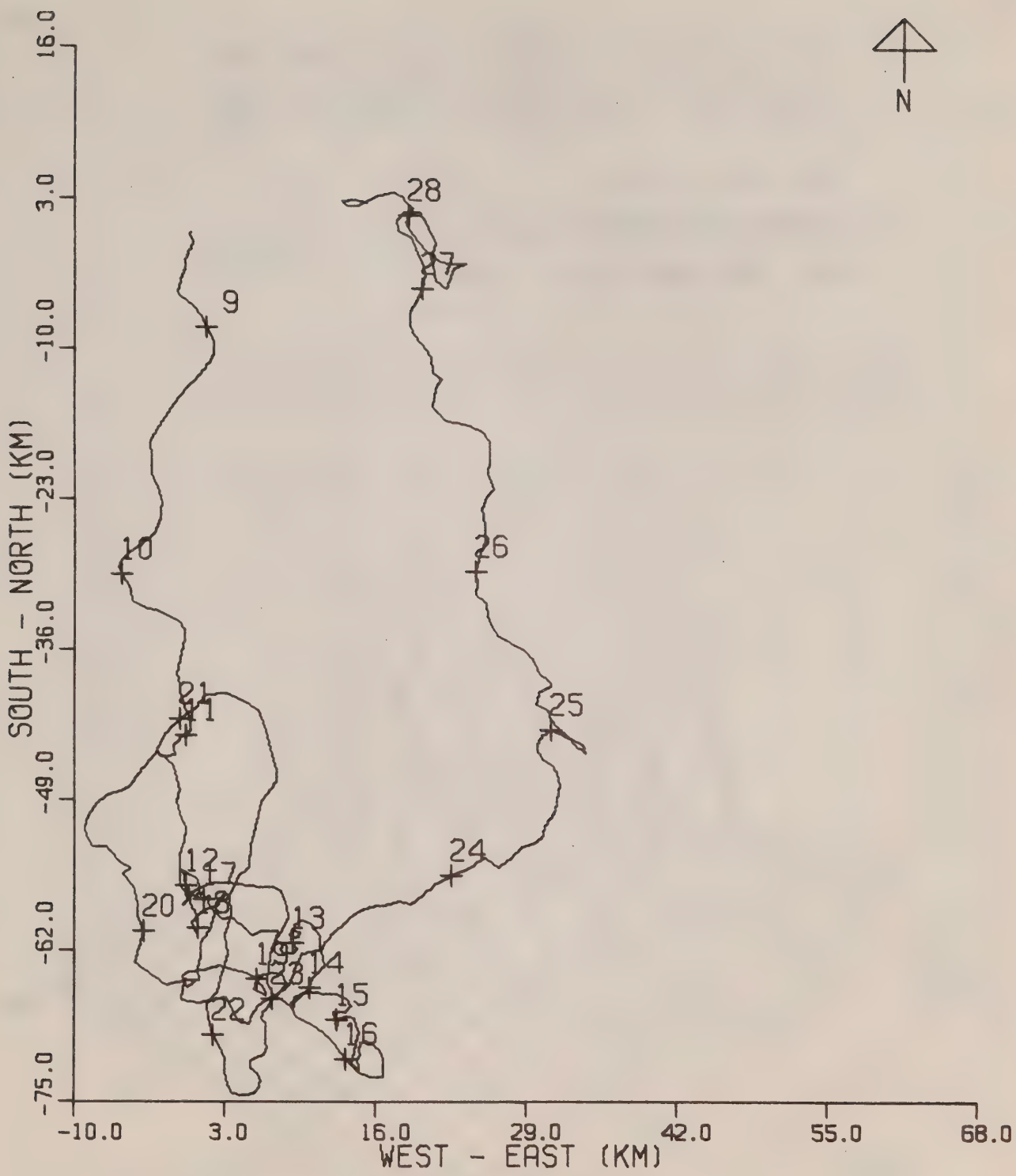
HOWE SOUND HS-3 DEPTH 3M. START DATE 08/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	96	4	**********
15	106	5	**********
25	71	3	*******
35	74	3	*******
45	44	2	**********
55	68	3	*******
65	62	3	*******
75	51	2	**********
85	70	3	*******
95	60	3	*******
105	76	3	*******
115	58	3	*******
125	85	4	********
135	79	4	********
145	94	4	**********
155	70	3	*******
165	57	3	*******
175	72	3	*******
185	50	2	**********
195	68	3	*******
205	26	1	*********
215	45	2	**********
225	47	2	**********
235	52	2	**********
245	50	2	**********
255	42	2	**********
265	43	2	**********
275	28	1	*********
285	59	3	**********
295	42	2	**********
305	56	3	**********
315	43	2	**********
325	53	2	**********
335	78	4	********
345	43	2	**********
355	69	3	*******
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2187
SAMPLE INTERVAL = 15 MINUTES

$R DTA/C.0+REJ;LIB 0=*T*

DATA FOR 10-METRE DEPTH



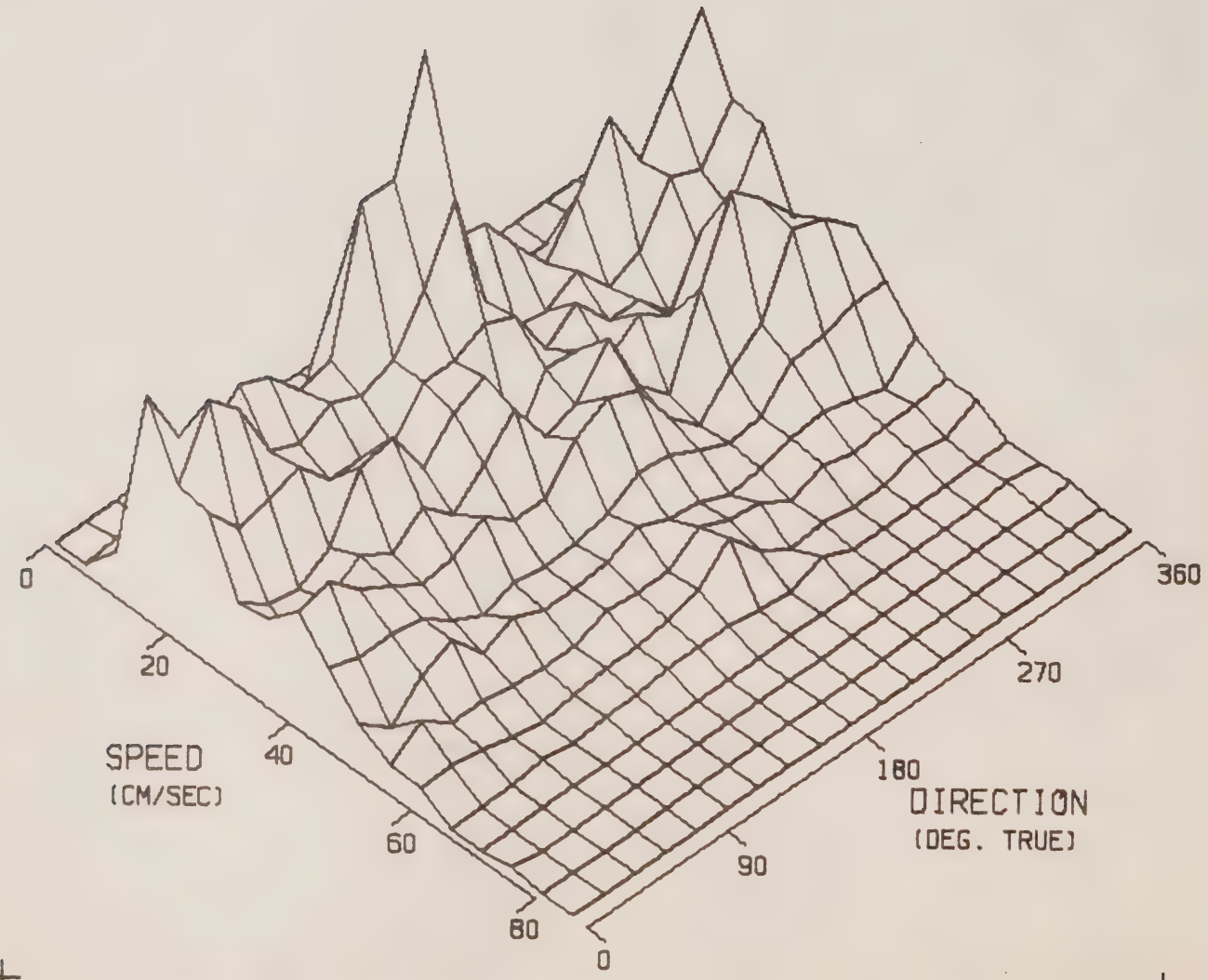
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 8/ 2/72 ENDING DATE: 28/ 2/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 8/ 2/72
NO. OF SAMPLES = 2909



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE: 8/ 2/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		021	045	027	021	021	004	004		001			144
15- 29	001	022	045	022	013	025	007	005					140
30- 44		021	036	019	013	020	009	005					123
45- 59		028	041	021	013	011	008	003	001				126
60- 74		022	021	021	021	014	007	002					108
75- 89		031	023	031	008	011	007						111
90-104	001	018	031	031	022	005	008						116
105-119		019	023	022	015	015	004	003	001				102
120-134		030	024	014	017	003	005	002	002				97
135-149		056	036	033	021	006	006	003					161
150-164	001	031	050	031	022	007	008	004	001				155
165-179		054	050	025	027	006	006	002					170
180-194		053	051	020	018	014	008	010	001				175
195-209	001	021	028	032	018	020	009	011					140
210-224		022	023	017	026	017	004	007					116
225-239		030	025	024	021	006	006	001	002				115
240-254	001	009	014	017	008	010	004	002	001				66
255-269		010	021	016	009	004	002	001					63
270-284		013	013	015	020	003	003	001					68
285-299		034	013	011	033	014	007	001					113
300-314	001	022	013	029	040	015	005						125
315-329		016	026	015	038	021	004	002					122
330-344		018	027	026	027	031	002	001					132
345-359		024	030	018	014	021	007	003	001				118
	6	709		485		140		10		0			2906
	625		537		320		73		1		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 3

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 08/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 60 . 120 . 180 . 240 . 300 .
9	0	0	
27	0	0	
45	0	0	
63	5	0	*
81	19	1	***
99	71	2	**********
117	146	5	**********
135	179	6	**********
153	211	7	**********
171	216	7	**********
189	174	6	**********
207	162	6	**********
225	122	4	**********
243	120	4	**********
261	128	4	**********
279	109	4	**********
297	127	4	**********
315	111	4	**********
333	100	3	**********
351	138	5	**********
369	107	4	**********
387	117	4	**********
405	89	3	**********
423	77	3	**********
441	76	3	**********
459	48	2	********
477	48	2	********
495	32	1	*****
513	34	1	******
531	28	1	*****
549	28	1	*****
567	25	1	****
585	18	1	***
603	15	1	***
621	14	0	**
639	5	0	*
657	4	0	*
675	2	0	
693	0	0	
711	0	0	

NO. OF SAMPLES OVER 720 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2909
SAMPLE INTERVAL = 10 MINUTES

STN. NO. HS-3 DEPTH 10 M.

STARTING DATE: 8/ 2/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		021	045	027	021	021	004	004		001			144
15- 29	001	022	045	022	013	025	007	005					140
30- 44		021	036	019	013	020	009	005					123
45- 59		028	041	021	013	011	008	003	001				126
60- 74		022	021	021	021	014	007	002					108
75- 89		031	023	031	008	011	007						111
90-104	001	018	031	031	022	005	008						116
105-119		019	023	022	015	015	004	003	001				102
120-134		030	024	014	017	003	005	002	002				97
135-149		056	036	033	021	006	006	003					161
150-164	001	031	050	031	022	007	008	004	001				155
165-179		054	050	025	027	006	006	002					170
180-194		053	051	020	018	014	008	010	001				175
195-209	001	021	028	032	018	020	009	011					140
210-224		022	023	017	026	017	004	007					116
225-239		030	025	024	021	006	006	001	002				115
240-254	001	009	014	017	008	010	004	002	001				66
255-269		010	021	016	009	004	002	001					63
270-284		013	013	015	020	003	003	001					68
285-299		034	013	011	033	014	007	001					113
300-314	001	022	013	029	040	015	005						125
315-329		016	026	015	038	021	004	002					122
330-344		018	027	026	027	031	002	001					132
345-359		024	030	018	014	021	007	003	001				118
	6	709		485		140		10		0			2906
	625		537		320		73		1		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 3

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 08/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60 120 180 240 300
9	0	0	
27	0	0	
45	0	0	
63	5	0	*
81	19	1	***
99	71	2	**********
117	146	5	**********
135	179	6	**********
153	211	7	**********
171	216	7	**********
189	174	6	**********
207	162	6	**********
225	122	4	**********
243	120	4	**********
261	128	4	**********
279	109	4	**********
297	127	4	**********
315	111	4	**********
333	100	3	**********
351	138	5	**********
369	107	4	**********
387	117	4	**********
405	89	3	**********
423	77	3	**********
441	76	3	**********
459	48	2	********
477	48	2	********
495	32	1	*****
513	34	1	******
531	28	1	*****
549	28	1	*****
567	25	1	****
585	18	1	***
603	15	1	***
621	14	0	**
639	5	0	*
657	4	0	*
675	2	0	
693	0	0	
711	0	0	

NO. OF SAMPLES OVER 720 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2909
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 08/02/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	118	4	**********
15	74	3	**********
25	99	3	**********
35	87	3	**********
45	75	3	**********
55	89	3	**********
65	76	3	**********
75	75	3	**********
85	70	2	**********
95	77	3	**********
105	69	2	**********
115	66	2	**********
125	66	2	**********
135	85	3	**********
145	115	4	**********
155	101	3	**********
165	110	4	**********
175	114	4	**********
185	117	4	**********
195	107	4	**********
205	84	3	**********
215	78	3	**********
225	84	3	**********
235	67	2	**********
245	45	2	**********
255	43	1	**********
265	42	1	**********
275	40	1	**********
285	70	2	**********
295	77	3	**********
305	78	3	**********
315	84	3	**********
325	86	3	**********
335	87	3	**********
345	77	3	**********
355	77	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

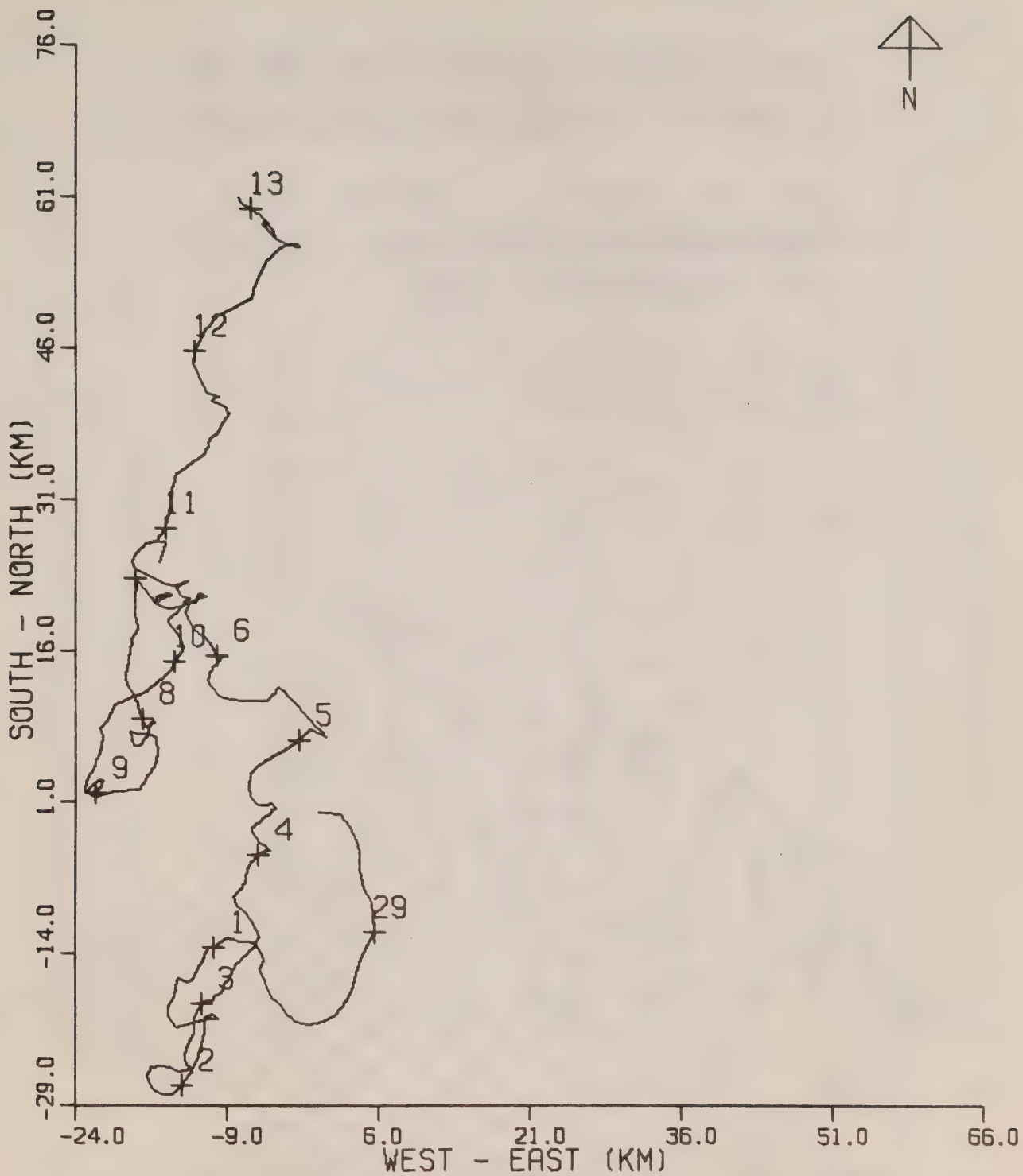
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2909
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 08/02/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 60 . 120 . 180 . 240 . 300 .
3.93	0	0	
3.99	0	0	
4.05	0	0	
4.11	0	0	
4.17	0	0	
4.23	0	0	
4.29	0	0	
4.35	0	0	
4.41	0	0	
4.47	21	1	****
4.53	33	1	******
4.59	41	1	*******
4.65	56	2	*********
4.71	110	4	********************
4.77	157	5	*****************************
4.83	157	5	*****************************
4.89	121	4	**********************
4.95	190	7	**********************************
5.01	120	4	**********************
5.07	126	4	**********************
5.13	152	5	****************************
5.19	94	3	*****************
5.25	119	4	**********************
5.31	99	3	******************
5.37	217	7	**
5.43	113	4	********************
5.49	142	5	**************************
5.55	201	7	************************************
5.61	116	4	**********************
5.67	118	4	**********************
5.73	140	5	*************************
5.79	74	3	*************
5.85	40	1	*******
5.91	45	2	********
5.97	43	1	*******
6.03	28	1	*****
6.09	17	1	***
6.15	15	1	***
6.21	2	0	
6.27	0	0	

NO. OF SAMPLES OVER 6.30 = 2
NO. OF SAMPLES UNDER 3.90 = 0
TOTAL NO. OF OBSERVATIONS = 2909
SAMPLE INTERVAL = 10 MINUTES



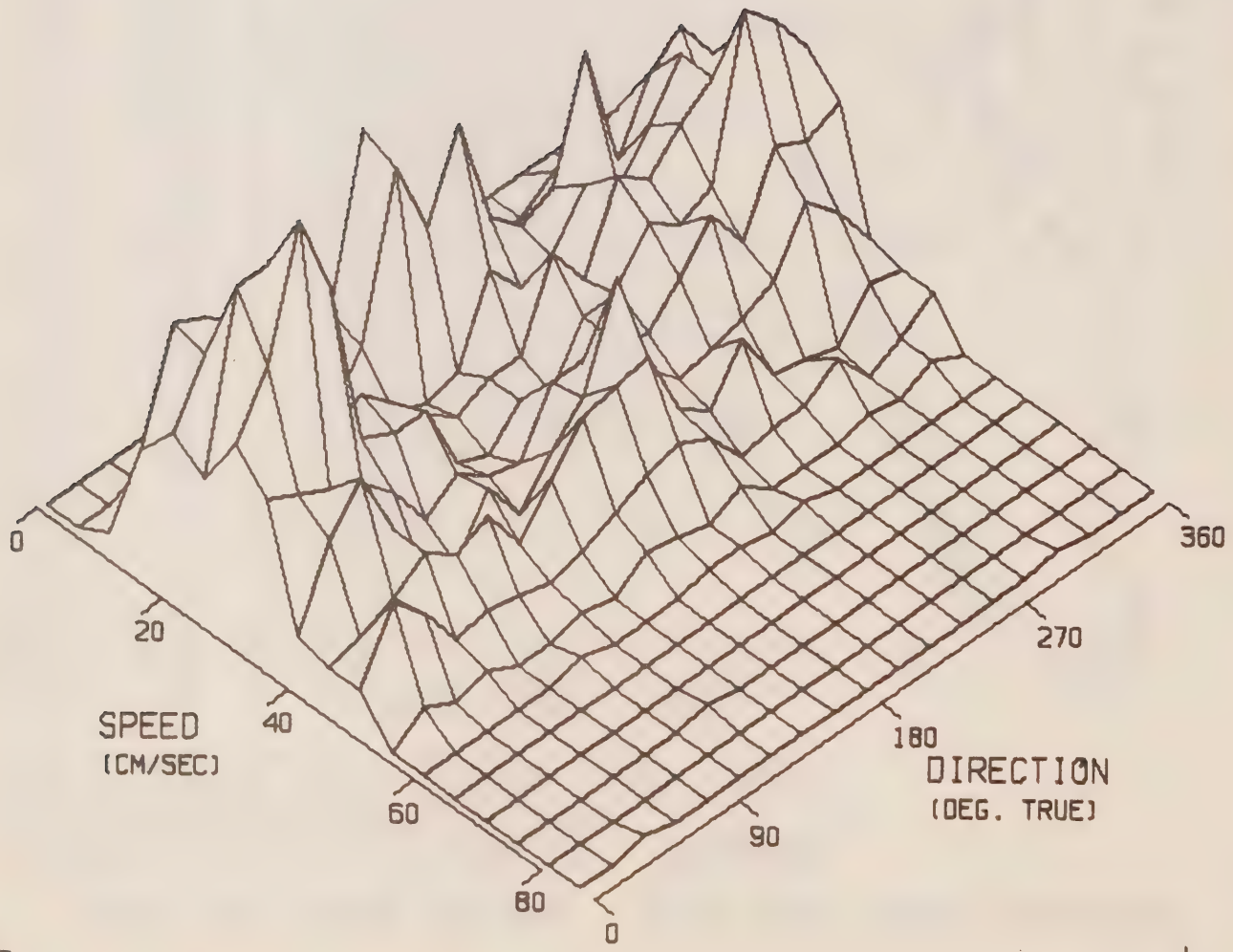
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 28/ 2/72 ENDING DATE: 13/ 3/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 28/ 2/72
NO. OF SAMPLES = 1946



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE:28/ 2/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		010	032	023	020	006	005						96
15- 29		018	042	043	020	013	008	001					145
30- 44		022	034	052	029	017	009				001		164
45- 59	001	024	025	055	017	015	005						142
60- 74		018	011	029	015	007	003						83
75- 89		015	016	013	009	007	003						63
90-104		005	008	016	004	009	002	001					45
105-119			001	017	009	006	002			001			36
120-134		005	005	011	002	005	001	001					30
135-149	001	011	006	006	005	010	002						41
150-164		036	008	003	004	012	005						68
165-179		035	003	003	006	021	007	001					76
180-194	001	023	007	007	014	016	004	001					73
195-209		022	017	004	017	022	006	001					89
210-224		011	013	016	013	012	006						71
225-239		008	009	006	006	006	003						38
240-254		012	014	018	011	007		001					63
255-269		010	015	019	014	009	001						68
270-284		013	021	018	013	006	001						72
285-299	001	014	023	017	020	003	004				001		83
300-314	003	008	020	033	018	004	002						88
315-329		018	026	034	021	006							105
330-344		015	021	036	025	008	003						108
345-359		011	014	029	015	005	004						78
	7	364	391	508	327	232	86	7	0	1	2	0	1925

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 21

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 28/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	30 60 90 120 150
8	0	0	
24	0	0	
40	3	0	*
56	2	0	*
72	2	0	*
88	23	1	********
104	71	4	**************************
120	78	4	****************************
136	96	5	**********************************
152	96	5	**********************************
168	87	4	*******************************
184	71	4	**************************
200	58	3	********************
216	101	5	************************************
232	106	5	**************************************
248	73	4	**************************
264	97	5	**********************************
280	91	5	********************************
296	101	5	************************************
312	114	6	**
328	102	5	************************************
344	80	4	****************************
360	49	3	*****************
376	58	3	********************
392	54	3	********************
408	33	2	************
424	41	2	***************
440	64	3	**********************
456	36	2	************
472	42	2	***************
488	24	1	********
504	30	2	**********
520	18	1	******
536	11	1	****
552	4	0	*
568	2	0	*
584	0	0	
600	1	0	
616	3	0	*
632	0	0	

NO. OF SAMPLES OVER 640 = 24
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1946
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 28/02/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	68	3	**********
15	80	4	**********
25	106	5	**********
35	113	6	**********
45	88	5	**********
55	97	5	**********
65	56	3	**********
75	43	2	**********
85	42	2	**********
95	31	2	**********
105	24	1	**********
115	28	1	**********
125	23	1	**********
135	22	1	**********
145	28	1	**********
155	44	2	**********
165	53	3	**********
175	48	2	**********
185	50	3	**********
195	62	3	**********
205	55	3	**********
215	47	2	**********
225	39	2	**********
235	20	1	**********
245	42	2	**********
255	47	2	**********
265	47	2	**********
275	45	2	**********
285	59	3	**********
295	53	3	**********
305	54	3	**********
315	84	4	**********
325	68	3	**********
335	77	4	**********
345	57	3	**********
355	46	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

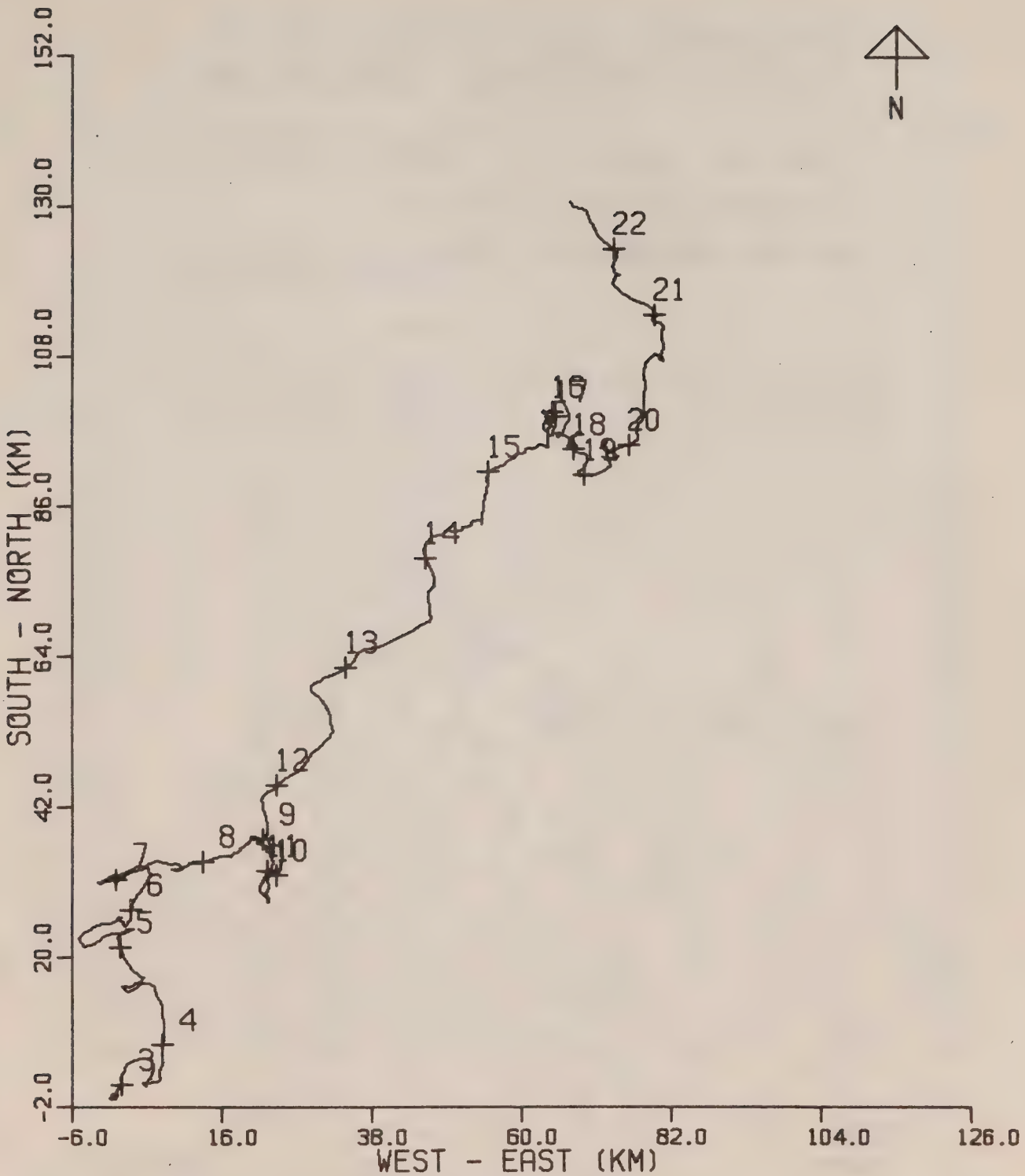
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1946
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 28/02/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 40 . 80 . 120 . 160 . 200 .
5.22	2	0	*
5.26	9	0	**
5.30	26	1	*******
5.34	26	1	*******
5.38	74	4	**********
5.42	36	2	*********
5.46	59	3	**********
5.50	17	1	****
5.54	39	2	**********
5.58	19	1	*****
5.62	35	2	*********
5.66	33	2	********
5.70	79	4	**********
5.74	87	4	**********
5.78	37	2	*********
5.82	105	5	**********
5.86	36	2	*********
5.90	72	4	**********
5.94	54	3	**********
5.98	102	5	**********
6.02	47	2	**********
6.06	138	7	**********
6.10	50	3	**********
6.14	132	7	**********
6.18	118	6	**********
6.22	126	6	**********
6.26	47	2	**********
6.30	83	4	**********
6.34	130	7	**********
6.38	52	3	**********
6.42	46	2	**********
6.46	5	0	*
6.50	7	0	**
6.54	2	0	*
6.58	4	0	*
6.62	0	0	
6.66	1	0	
6.70	1	0	
6.74	1	0	
6.78	1	0	

NO. OF SAMPLES OVER 6.80 = 8
NO. OF SAMPLES UNDER 5.20 = 0
TOTAL NO. OF OBSERVATIONS = 1946
SAMPLE INTERVAL = 10 MINUTES



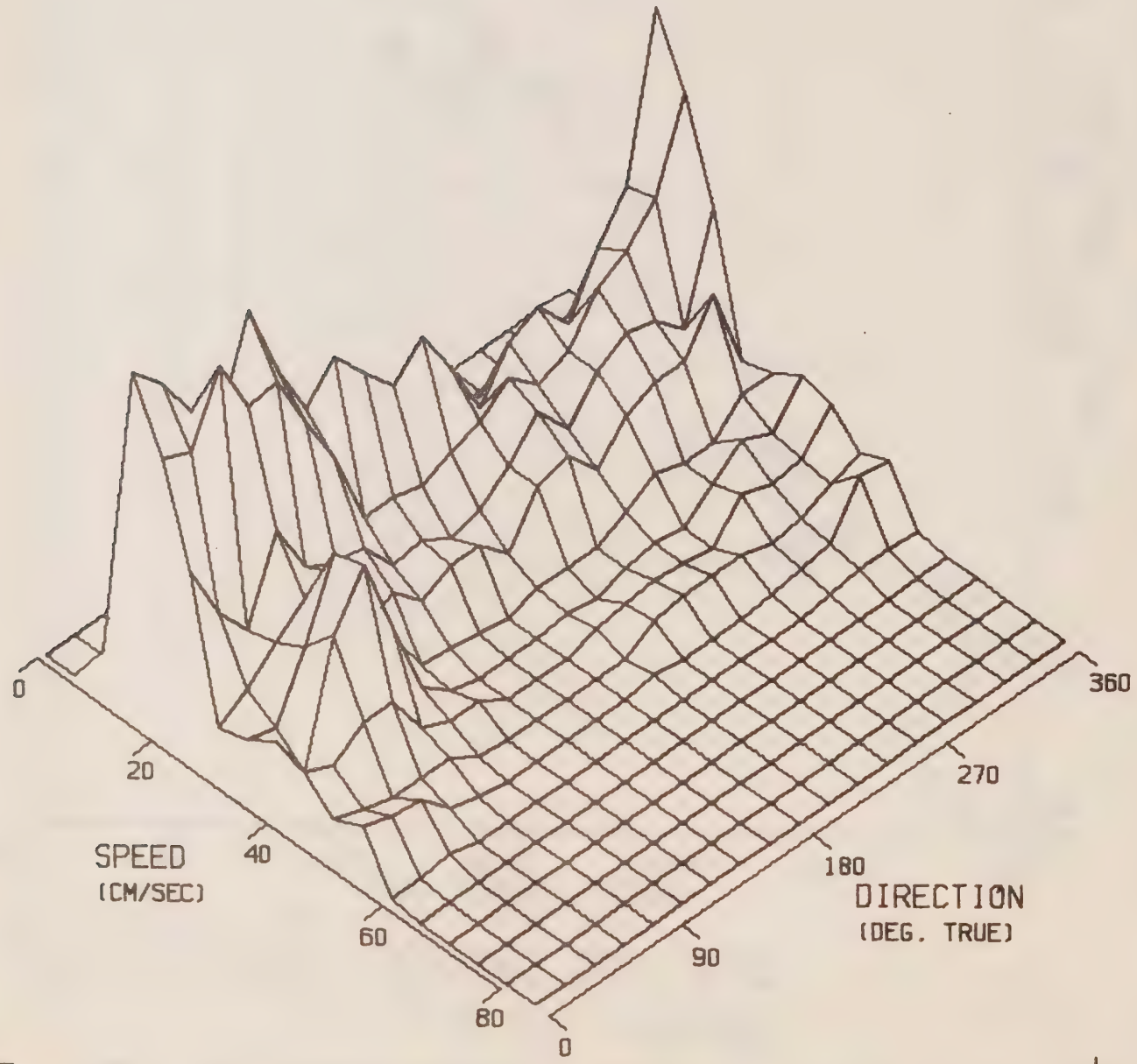
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 2/ 5/72 ENDING DATE: 22/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 2/ 5/72
NO. OF SAMPLES = 2901



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE: 2/ 5/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		039	076	037	008	020	007	004					191
15- 29		046	065	028	010	014	010	002					175
30- 44		040	077	025	026	027	012	003					210
45- 59		037	050	034	041	031	005	001					199
60- 74	001	043	079	038	043	027	005	001					237
75- 89		043	070	026	024	012	004						179
90-104		047	047	019	019	008	001						141
105-119		026	053	018	004	006							107
120-134		039	035	018	005								97
135-149		044	018	012									74
150-164		037	019	017	001								74
165-179		031	021	012	001								65
180-194		033	017	014									64
195-209	002	018	029	007	002	003	001						62
210-224	002	020	026	018	001	003	001						71
225-239		023	025	028	002	004	002						84
240-254	001	017	025	020	004	007	004						78
255-269	002	019	022	012	005	004	001						65
270-284	001	023	021	024	008	003	001						81
285-299		014	027	028	008	006	007	001					91
300-314		019	035	032	008	006	003	001					104
315-329		026	038	029	015	006	005	003					122
330-344		037	046	028	013	014	006	004					148
345-359		034	062	025	018	022	014	007					182
	9	755	983	549	266	223	89	27	0	0	0	0	2901

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 02/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 50 . 100 . 150 . 200 . 250 .
8	0	0	
24	0	0	
40	2	0	
56	0	0	
72	7	0	*
88	34	1	*******
104	92	3	*******************
120	183	6	**************************************
136	208	7	**
152	238	8	**
168	252	9	**
184	245	8	**
200	225	8	**
216	176	6	************************************
232	127	4	**************************
248	90	3	*******************
264	111	4	************************
280	130	4	****************************
296	93	3	********************
312	83	3	*****************
328	73	3	****************
344	60	2	************
360	49	2	**********
376	53	2	***********
392	49	2	**********
408	31	1	******
424	53	2	***********
440	37	1	*******
456	47	2	*********
472	37	1	*******
488	20	1	****
504	17	1	***
520	19	1	****
536	16	1	***
552	24	1	*****
568	11	0	**
584	8	0	**
600	1	0	
616	0	0	
632	0	0	

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2901
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 02/05/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	144	5	**********
15	122	4	********
25	110	4	********
35	142	5	**********
45	133	5	**********
55	140	5	**********
65	156	5	**********
75	145	5	**********
85	108	4	********
95	102	4	********
105	76	3	******
115	67	2	*****
125	67	2	*****
135	54	2	*****
145	50	2	*****
155	51	2	*****
165	46	2	*****
175	40	1	*****
185	42	1	*****
195	39	1	*****
205	46	2	*****
215	50	2	*****
225	51	2	*****
235	52	2	*****
245	50	2	*****
255	51	2	*****
265	41	1	*****
275	56	2	*****
285	62	2	*****
295	61	2	*****
305	73	3	******
315	81	3	******
325	76	3	******
335	97	3	********
345	102	4	********
355	118	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

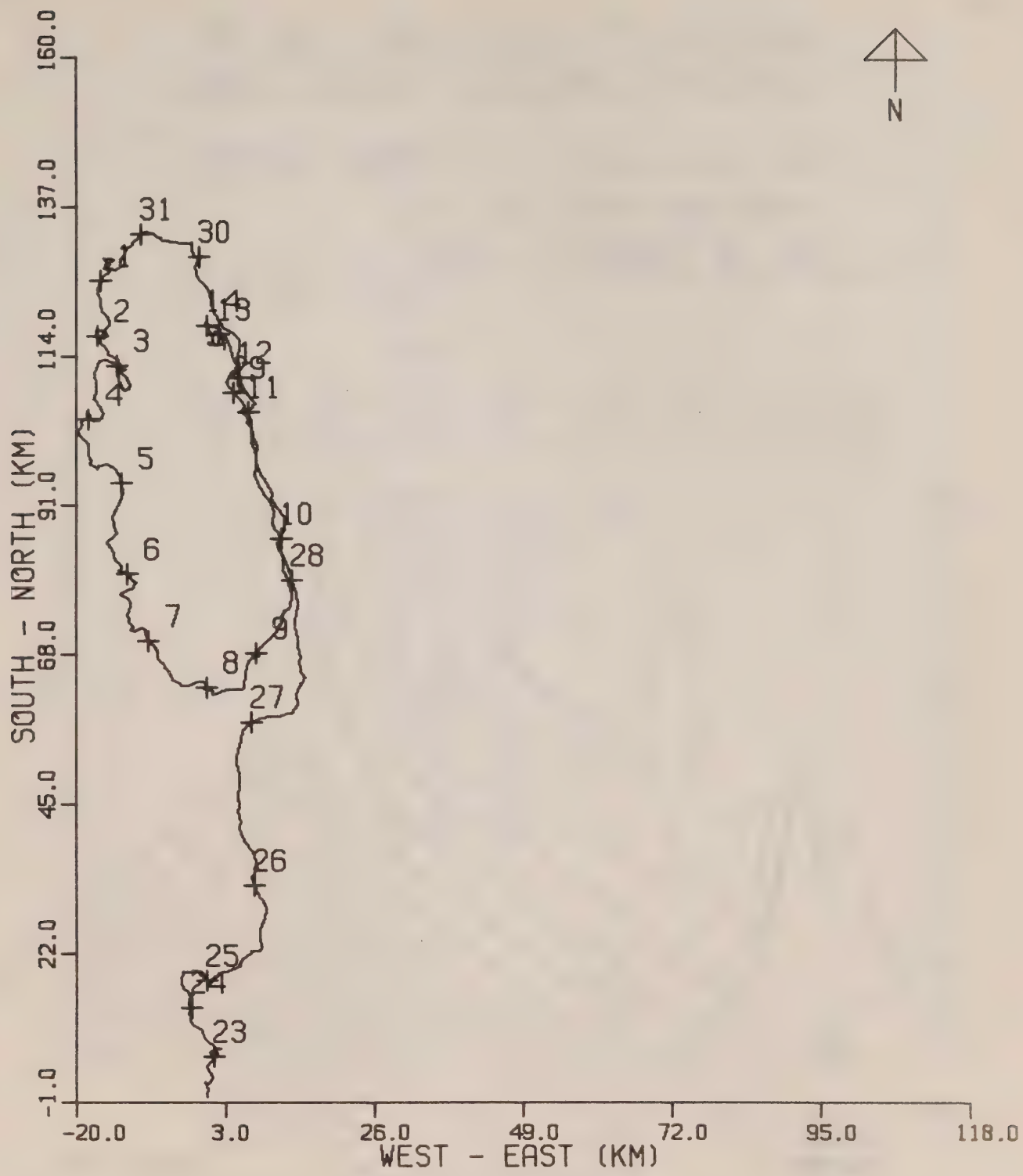
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2901
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 02/05/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 70 . 140 . 210 . 280 . 350 .
6.65	0	0	
6.75	0	0	
6.85	0	0	
6.95	129	4	**********
7.05	239	8	**********
7.15	141	5	**********
7.25	320	11	**********
7.35	110	4	**********
7.45	33	1	*****
7.55	60	2	*********
7.65	97	3	**********
7.75	69	2	**********
7.85	84	3	**********
7.95	113	4	**********
8.05	97	3	**********
8.15	127	4	**********
8.25	100	3	**********
8.35	128	4	**********
8.45	114	4	**********
8.55	90	3	**********
8.65	135	5	**********
8.75	117	4	**********
8.85	93	3	**********
8.95	52	2	*******
9.05	58	2	********
9.15	44	2	******
9.25	42	1	******
9.35	41	1	******
9.45	39	1	******
9.55	48	2	*******
9.65	36	1	*****
9.75	33	1	*****
9.85	19	1	***
9.95	28	1	****
10.05	19	1	***
10.15	6	0	*
10.25	10	0	*
10.35	14	0	**
10.45	10	0	*
10.55	5	0	*

NO. OF SAMPLES OVER 10.60 = 1
NO. OF SAMPLES UNDER 6.60 = 0
TOTAL NO. OF OBSERVATIONS = 2901
SAMPLE INTERVAL = 10 MINUTES



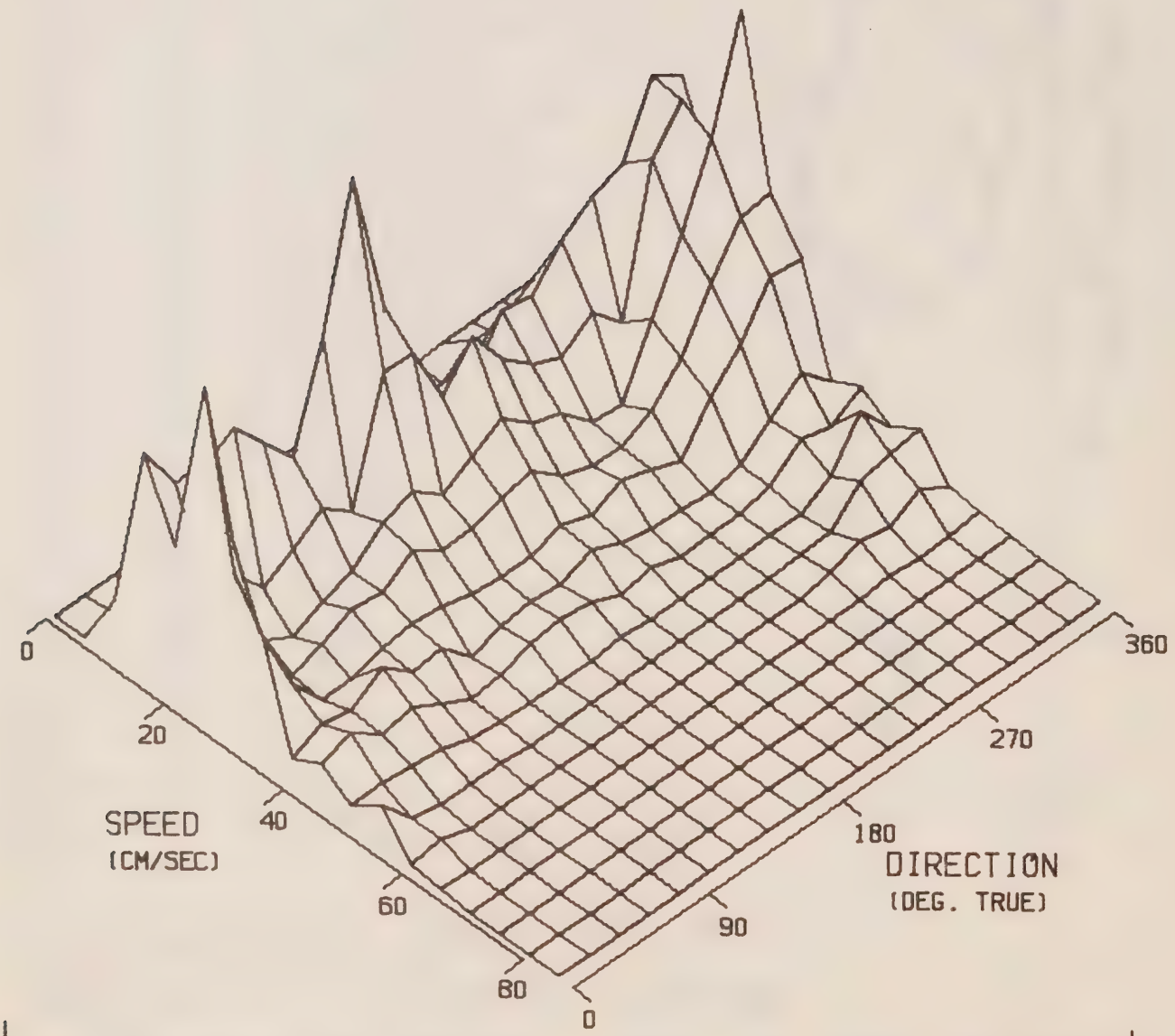
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 22/ 5/72 ENDING DATE: 14/ 6/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 22/ 5/72
NO. OF SAMPLES = 3299



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE:22/ 5/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO	080 TO	160 TO	240 TO	320 TO	400 TO	480 TO	560 TO	640 TO	720 TO	800 TO	880 TO	
DIR	079	159	239	319	399	479	559	639	719	799	879	959	
0- 14		049	064	091	029	010	007	008					258
15- 29	001	052	030	036	018	021	007	003					168
30- 44	002	029	024	013	011	012	006						97
45- 59		047	037	012	011	011	007						125
60- 74	002	026	031	011	008	018	002						98
75- 89		040	022	015	011	006	001						95
90-104		030	032	018	016	005	001						102
105-119	001	050	024	022	008	003							108
120-134	001	048	039	030	008	001							127
135-149		074	068	031	009	007							189
150-164		058	063	017	008	004							150
165-179		042	037	024	010	005	001						119
180-194		016	046	028	009	004							103
195-209		018	047	025	011	002							103
210-224		019	027	021	006	003							76
225-239		025	038	013	011	001							88
240-254	003	026	021	013	009								72
255-269	006	035	021	013	004	001							80
270-284	002	043	034	011	002		001	001					94
285-299	002	040	020	020	010	001		001					94
300-314	002	042	023	036	011	003	001	007					125
315-329	002	054	081	059	025	016	011	004					252
330-344	004	058	076	082	040	013	019	006					298
345-359		054	072	084	035	012	015	006					278
	28	977		320		79		0		0			3299
	975		725		159		36		0		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 22/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 80 160 240 320 400
8	0	0	
24	0	0	
40	2	0	
56	6	0	*
72	20	1	***
88	50	2	******
104	141	4	**********
120	199	6	**********
136	294	9	**********
152	291	9	**********
168	246	7	**********
184	234	7	**********
200	221	7	**********
216	172	5	**********
232	158	5	**********
248	133	4	**********
264	161	5	**********
280	149	5	**********
296	117	4	**********
312	111	3	**********
328	97	3	**********
344	80	2	**********
360	67	2	**********
376	42	1	**********
392	44	1	**********
408	27	1	**********
424	29	1	**********
440	32	1	**********
456	33	1	**********
472	28	1	**********
488	17	1	**********
504	20	1	**********
520	15	0	**********
536	18	1	**********
552	15	0	**********
568	5	0	**********
584	15	0	**********
600	4	0	**********
616	4	0	**********
632	2	0	

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3299
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 22/05/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	197	6	**********
15	143	4	*******
25	93	3	*****
35	58	2	***
45	82	2	****
55	82	2	****
65	62	2	***
75	57	2	***
85	77	2	****
95	64	2	***
105	74	2	****
115	73	2	****
125	85	3	*****
135	112	3	******
145	122	4	*******
155	100	3	******
165	86	3	*****
175	76	2	****
185	60	2	***
195	79	2	****
205	65	2	***
215	52	2	**
225	51	2	**
235	67	2	***
245	44	1	**
255	49	1	**
265	54	2	***
275	65	2	***
285	58	2	***
295	68	2	****
305	99	3	******
315	100	3	******
325	189	6	**********
335	198	6	**********
345	193	6	**********
355	165	5	*********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

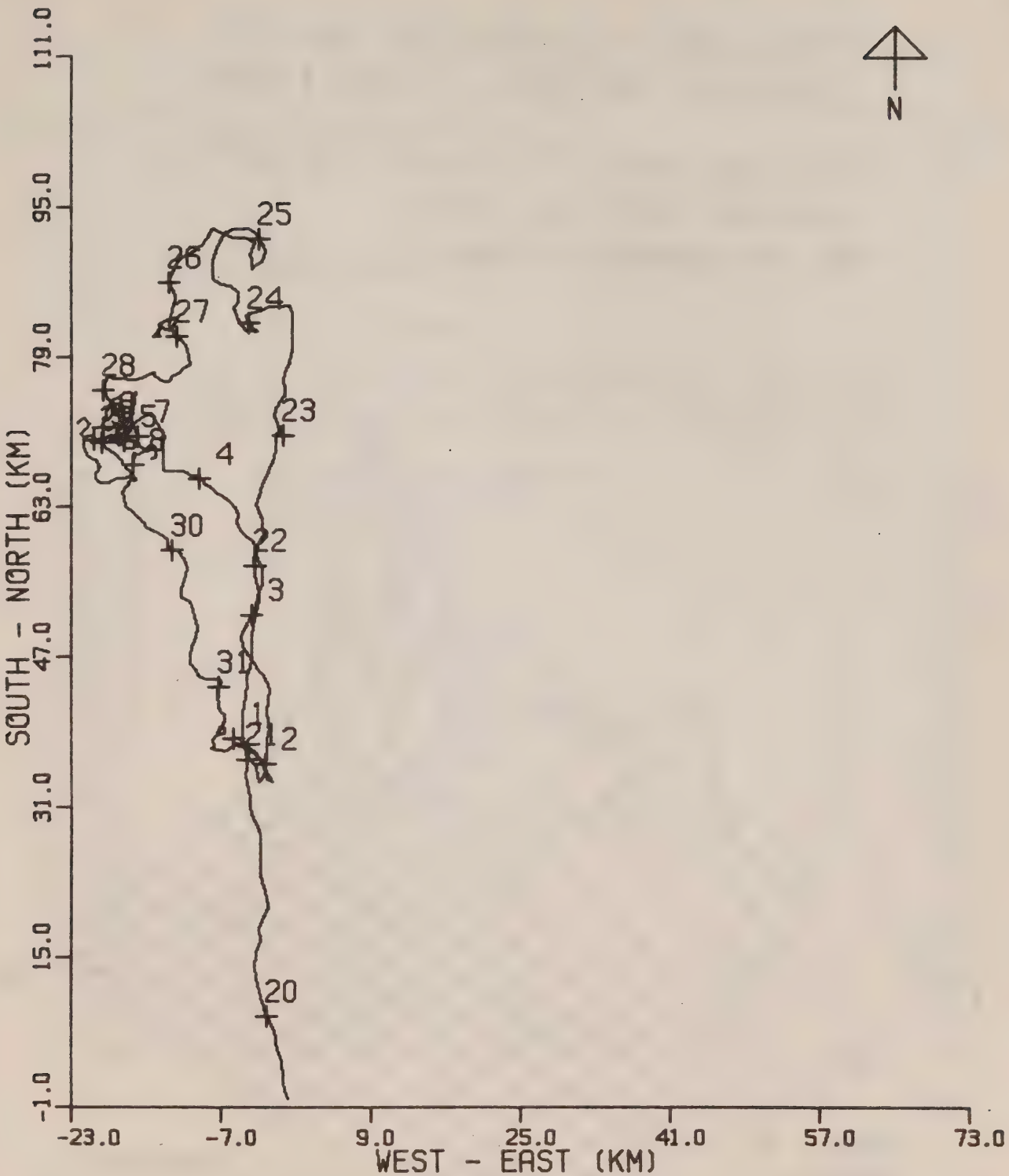
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3299
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 22/05/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 80 160 240 320 400
7.75	0	0	
7.85	16	0	**
7.95	88	3	**********
8.05	291	9	**********
8.15	350	11	**********
8.25	221	7	**********
8.35	259	8	**********
8.45	224	7	**********
8.55	234	7	**********
8.65	254	8	**********
8.75	167	5	**********
8.85	101	3	**********
8.95	73	2	**********
9.05	58	2	*******
9.15	73	2	**********
9.25	151	5	**********
9.35	123	4	**********
9.45	116	4	**********
9.55	86	3	**********
9.65	82	2	**********
9.75	74	2	**********
9.85	58	2	*******
9.95	50	2	******
10.05	25	1	***
10.15	19	1	**
10.25	22	1	***
10.35	23	1	***
10.45	16	0	**
10.55	9	0	*
10.65	8	0	*
10.75	8	0	*
10.85	5	0	*
10.95	4	0	*
11.05	4	0	*
11.15	3	0	
11.25	1	0	
11.35	0	0	
11.45	0	0	
11.55	1	0	
11.65	1	0	

NO. OF SAMPLES OVER 11.70 = 1
NO. OF SAMPLES UNDER 7.70 = 0
TOTAL NO. OF OBSERVATIONS = 3299
SAMPLE INTERVAL = 10 MINUTES



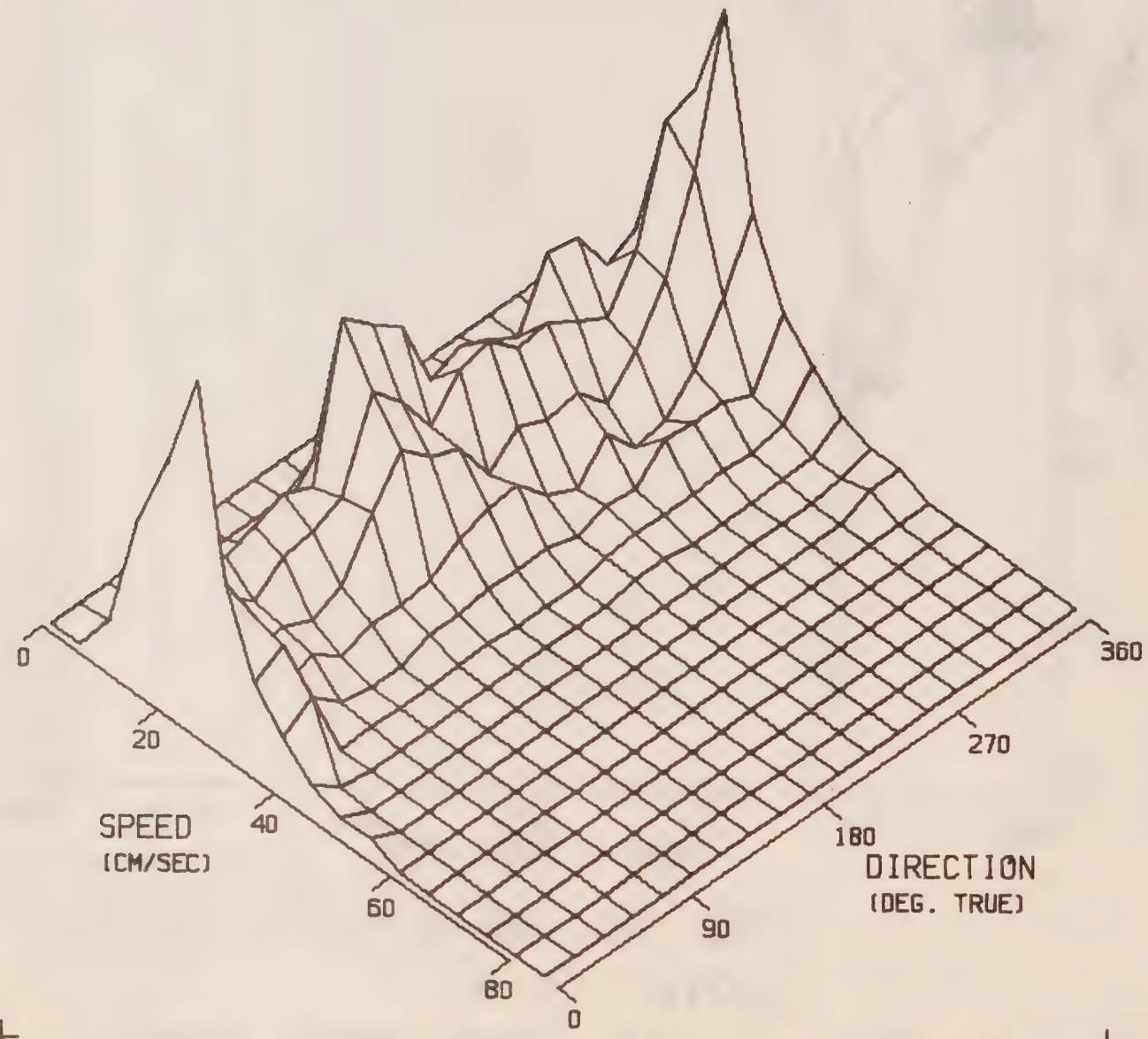
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 19/ 7/72 ENDING DATE: 9/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 19/ 7/72
NO. OF SAMPLES = 2991



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE:19/ 7/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		041	099	108	034	018	003					001	304
15- 29		036	067	043	045	004							195
30- 44		014	035	016	014								79
45- 59		013	027	009	001								50
60- 74		015	022	016	003								56
75- 89		018	030	009									57
90-104	001	019	032	008	002								62
105-119		021	032	012	002								67
120-134	002	034	050	023	005								114
135-149		064	080	027	005								176
150-164		042	069	027	005								143
165-179		040	056	033	006								135
180-194		034	047	030	005								116
195-209		027	053	026	005								111
210-224	001	023	058	017	001	003							103
225-239		017	060	014	008	003							102
240-254		012	044	017	007	001							81
255-269	001	024	045	021	006	001							98
270-284	001	042	041	009	014								107
285-299		041	046	014	018	001							120
300-314		040	033	029	008	001							111
315-329		041	050	036	014	002							143
330-344		034	078	049	010	005	002						178
345-359		032	116	094	024	006	010	001					283
	6	1270		242		15		0		0			2991
	724		687		45		1		0		1		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 19/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 60 . 120 . 180 . 240 . 300 .
7	0	0	
21	0	0	
35	1	0	
49	2	0	
63	2	0	
77	3	0	*
91	37	1	******
105	66	2	**********
119	162	5	**********
133	160	5	**********
147	229	8	**********
161	223	7	**********
175	195	7	**********
189	270	9	**********
203	182	6	**********
217	260	9	**********
231	208	7	**********
245	158	5	**********
259	176	6	**********
273	103	3	**********
287	114	4	**********
301	59	2	**********
315	100	3	**********
329	54	2	**********
343	44	1	*******
357	54	2	**********
371	32	1	*****
385	34	1	******
399	14	0	**
413	11	0	**
427	3	0	*
441	5	0	*
455	7	0	*
469	5	0	*
483	4	0	*
497	1	0	
511	2	0	
525	1	0	
539	4	0	*
553	4	0	*

NO. OF SAMPLES OVER 560 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2991
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 19/07/72

MEDIAN (DEG.T)	FREQUNCY NO.	PCT	50 100 150 200 250
5	237	8	**********
15	149	5	**********
25	120	4	**********
35	57	2	**********
45	34	1	*******
55	33	1	*******
65	44	1	*********
75	34	1	*******
85	37	1	*******
95	42	1	********
105	45	2	*********
115	45	2	*********
125	68	2	**********
135	114	4	**********
145	112	4	**********
155	93	3	**********
165	95	3	**********
175	82	3	**********
185	90	3	**********
195	71	2	**********
205	69	2	**********
215	73	2	**********
225	68	2	**********
235	66	2	**********
245	51	2	**********
255	58	2	**********
265	72	2	**********
275	64	2	**********
285	74	2	**********
295	85	3	**********
305	72	2	**********
315	79	3	**********
325	105	4	**********
335	119	4	**********
345	155	5	**********
355	179	6	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

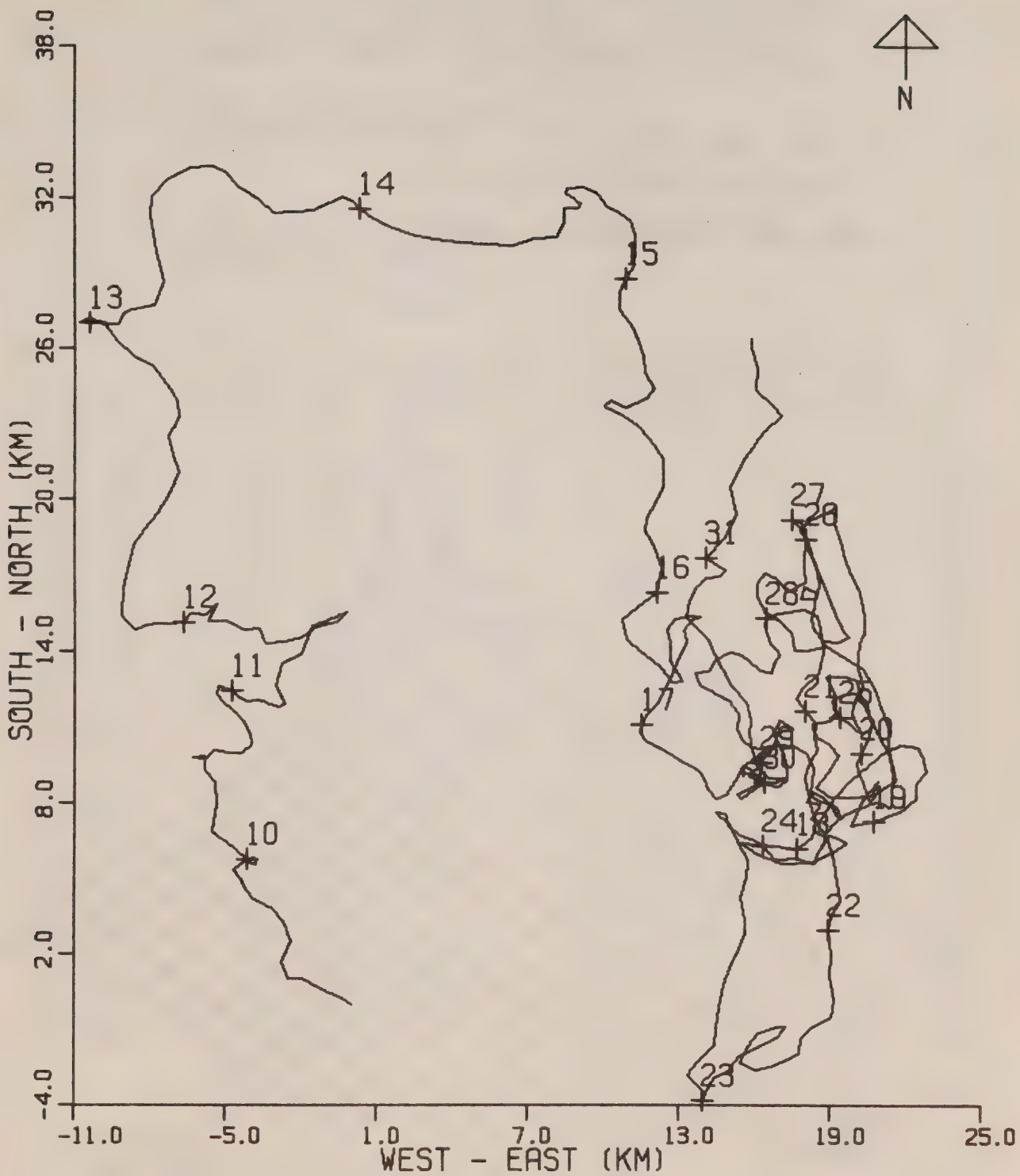
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2991
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 19/07/72

MEDIAN (DEG.C)	FREQUNCY NO.	PCT	50 100 150 200 250
9.66	8	0	**
9.78	25	1	*****
9.90	65	2	**********
10.02	84	3	**********
10.14	44	1	*********
10.26	84	3	**********
10.38	84	3	**********
10.50	77	3	**********
10.62	78	3	**********
10.74	96	3	**********
10.86	123	4	**********
10.98	131	4	**********
11.10	91	3	**********
11.22	167	6	**********
11.34	144	5	**********
11.46	102	3	**********
11.58	200	7	**********
11.70	154	5	**********
11.82	144	5	**********
11.94	130	4	**********
12.06	83	3	**********
12.18	33	1	*******
12.30	68	2	**********
12.42	68	2	**********
12.54	57	2	**********
12.66	61	2	**********
12.78	70	2	**********
12.90	52	2	**********
13.02	78	3	**********
13.14	61	2	**********
13.26	23	1	*****
13.38	37	1	*******
13.50	38	1	********
13.62	29	1	******
13.74	50	2	**********
13.86	39	1	********
13.98	18	1	****
14.10	16	1	***
14.22	18	1	****
14.34	10	0	**

NO. OF SAMPLES OVER 14.40 = 51
NO. OF SAMPLES UNDER 9.60 = 0
TOTAL NO. OF OBSERVATIONS = 2991
SAMPLE INTERVAL = 10 MINUTES



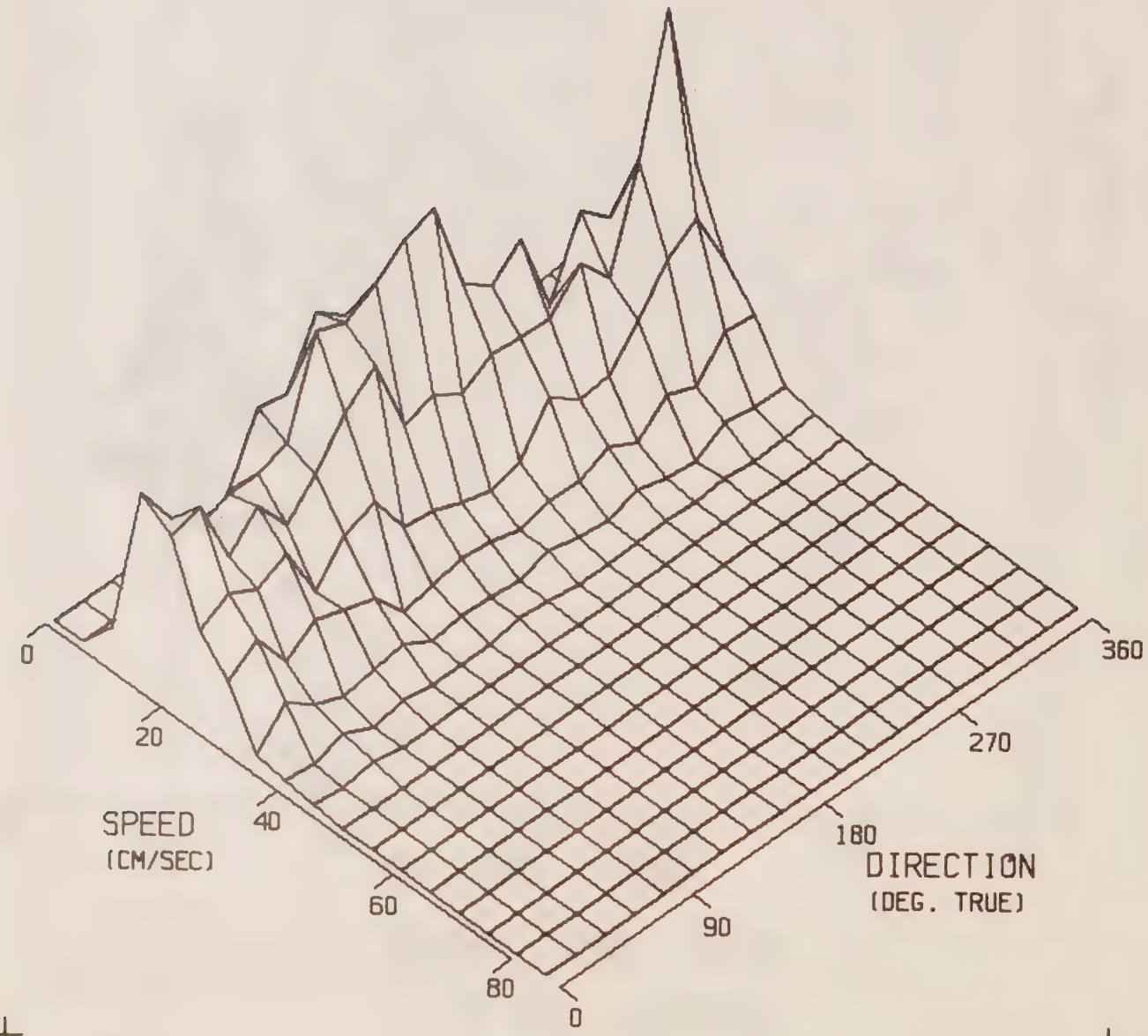
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 9/ 8/72 ENDING DATE: 31/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 9/ 8/72
NO. OF SAMPLES = 3180



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE: 9/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		043	064	026	004	001							138
15- 29		030	058	046	012	001							147
30- 44		029	054	021	010	003							117
45- 59		028	032	038	006								104
60- 74	002	038	049	028	003								120
75- 89	002	047	040	022	002	001							114
90-104	006	050	051	026	005								138
105-119	007	061	063	033	005								169
120-134	005	081	067	014									167
135-149	008	075	076	012	003								174
150-164	007	090	050	016	003	002							168
165-179	006	057	048	012	001								124
180-194		053	067	011	003								134
195-209	001	062	056	006	004								129
210-224	001	050	049	007	001								108
225-239	002	031	046	016	001								96
240-254	003	034	050	024	002								113
255-269	003	042	051	014	005								115
270-284		022	044	014									80
285-299		026	048	022	001								97
300-314		041	054	030	003	001							129
315-329		028	084	028	004								144
330-344	003	030	118	038	006								195
345-359		038	079	038	005								160
	56	1398		89		0		0		0			3180
	1086		542		9		0		0		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DAPTH 10M, START DATE 09/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50	100	150	200	250
5	0	0					
15	0	0					
25	0	0					
35	2	0					
45	2	0					
55	11	0	**				
65	15	0	***				
75	26	1	*****				
85	65	2	**********				
95	75	2	**********				
105	131	4	**********				
115	101	3	**********				
125	158	5	**********				
135	146	5	**********				
145	241	8	**********				
155	169	5	**********				
165	175	6	**********				
175	276	9	**********				
185	158	5	**********				
195	226	7	**********				
205	142	4	**********				
215	205	6	**********				
225	112	4	**********				
235	155	5	**********				
245	79	2	**********				
255	79	2	**********				
265	95	3	**********				
275	47	1	**********				
285	65	2	**********				
295	46	1	**********				
305	54	2	**********				
315	26	1	*****				
325	24	1	*****				
335	18	1	****				
345	15	0	***				
355	13	0	***				
365	7	0	*				
375	10	0	**				
385	1	0					
395	2	0					

NO. OF SAMPLES OVER 400 = 8
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3180
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DAPTH 10M, START DATE 09/08/72

MEDIAN (DEG,T)	FREQUNCY NO.	PCT	30 60 90 120 150
5	107	3	**********
15	87	3	********
25	106	3	**********
35	74	2	*******
45	64	2	******
55	81	3	********
65	82	3	********
75	71	2	*******
85	77	2	*******
95	93	3	*********
105	100	3	**********
115	111	3	***********
125	112	4	***********
135	119	4	************
145	114	4	***********
155	122	4	************
165	91	3	*********
175	75	2	*******
185	105	3	**********
195	78	2	*******
205	83	3	********
215	69	2	*******
225	73	2	*******
235	62	2	******
245	72	2	*******
255	87	3	********
265	63	2	******
275	57	2	*****
285	57	2	*****
295	67	2	******
305	86	3	********
315	77	2	*******
325	113	4	***********
335	124	4	************
345	141	4	**************
355	80	3	********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

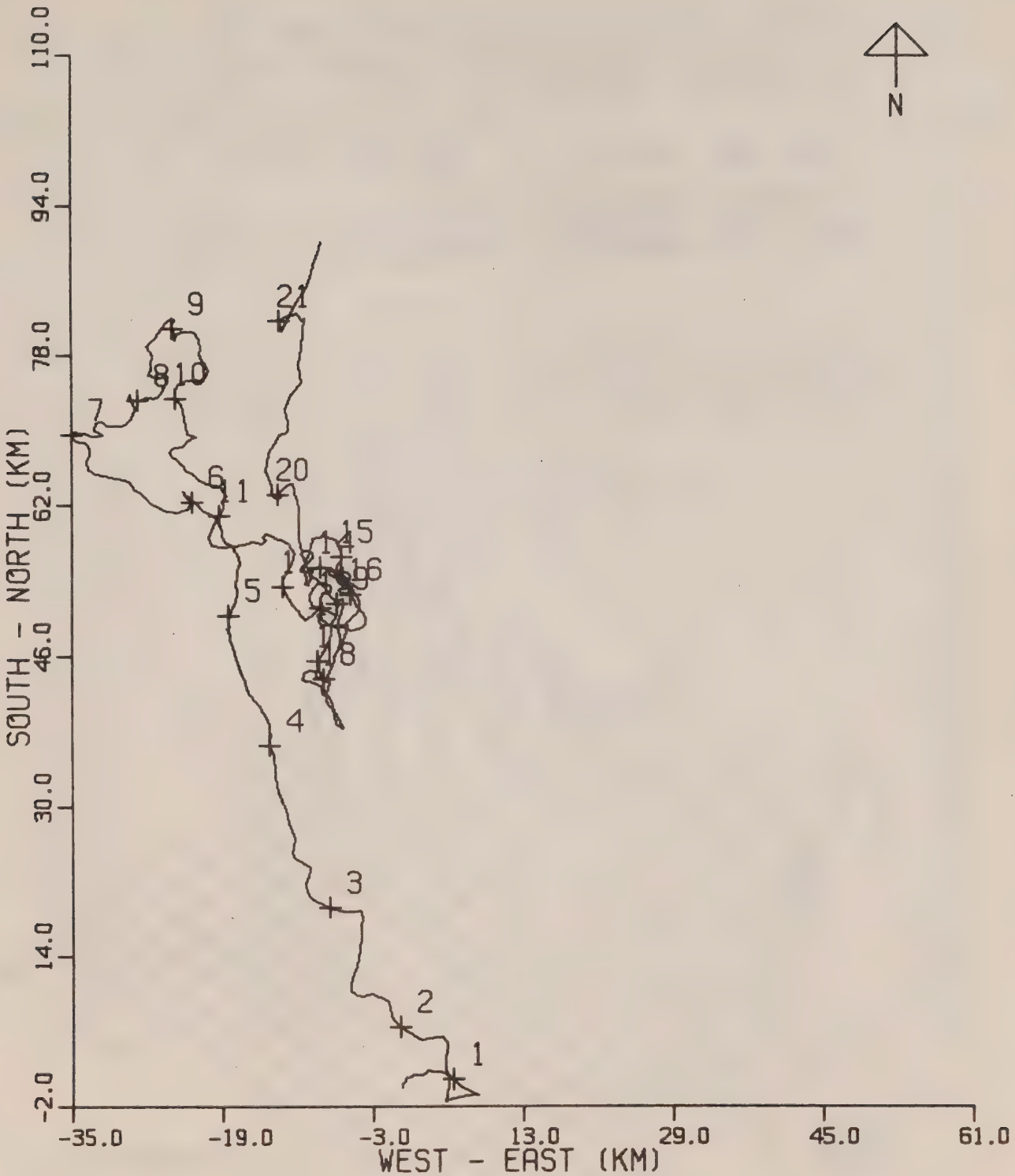
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3180
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DAPTH 10M, START DATE 09/08/72

MEDIAN (DEG.C)	FREQ'NCY NO.	PCT	40	80	120	160	200
9.84	61	2	**********				
9.92	47	1	**********				
10.00	48	2	**********				
10.08	77	2	**********				
10.16	67	2	**********				
10.24	142	4	**********				
10.32	148	5	**********				
10.40	229	7	**********				
10.48	146	5	**********				
10.56	136	4	**********				
10.64	191	6	**********				
10.72	142	4	**********				
10.80	136	4	**********				
10.88	84	3	**********				
10.96	147	5	**********				
11.04	97	3	**********				
11.12	110	3	**********				
11.20	122	4	**********				
11.28	70	2	**********				
11.36	111	3	**********				
11.44	56	2	**********				
11.52	102	3	**********				
11.60	66	2	**********				
11.68	63	2	**********				
11.76	43	1	**********				
11.84	61	2	**********				
11.92	90	3	**********				
12.00	57	2	**********				
12.08	70	2	**********				
12.16	38	1	**********				
12.24	45	1	**********				
12.32	22	1	******				
12.40	29	1	*******				
12.48	29	1	*******				
12.56	19	1	*****				
12.64	8	0	**				
12.72	1	0					
12.80	4	0	*				
12.88	2	0	*				
12.96	2	0	*				

NO. OF SAMPLES OVER 13.00 = 6
NO. OF SAMPLES UNDER 9.80 = 56
TOTAL NO. OF OBSERVATIONS = 3180
SAMPLE INTERVAL = 10 MINUTES



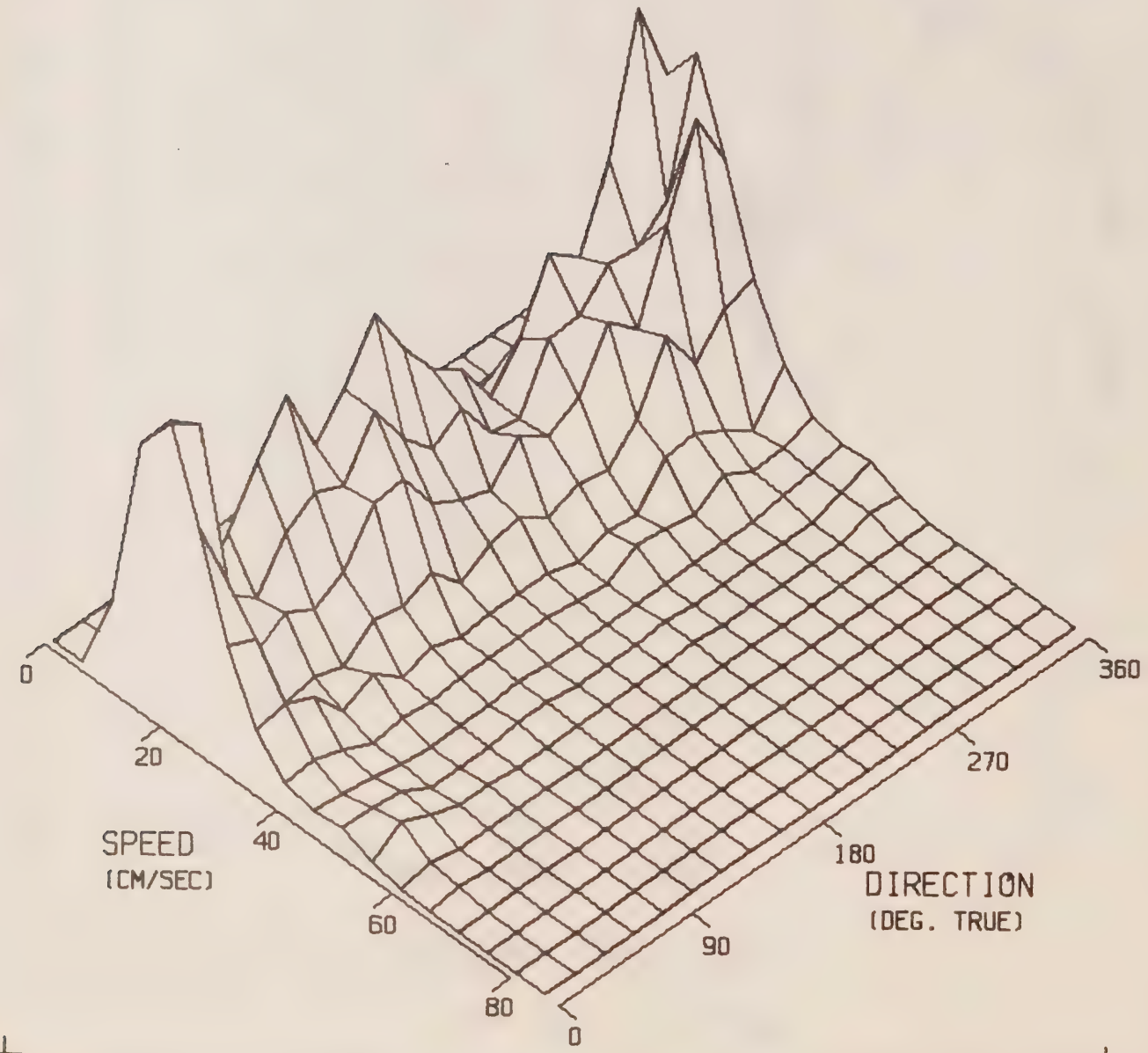
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 31/ 8/72 ENDING DATE: 21/ 9/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 31/ 8/72
NO. OF SAMPLES = 2992



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE:31/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	001	057	096	059	017	007	008	001					246
15- 29		042	103	036	017	007	009	003	001				218
30- 44		019	028	018	017	005	007	001					95
45- 59		012	028	013	004	002	003						62
60- 74		029	025	016	004		001						75
75- 89		036	034	010	011								91
90-104		046	033	016	001								96
105-119		046	051	025	002								124
120-134		023	055	037	007	001	001						124
135-149	001	034	055	031	002	002	001						126
150-164	001	051	054	016	001	002							125
165-179	001	044	037	017	004	001							104
180-194	002	043	030	016	005								96
195-209		028	033	021	002	001							85
210-224		020	025	019	001		002						67
225-239		019	023	016	004	001							63
240-254		019	026	022	002	003							72
255-269		017	052	016	004								89
270-284		028	049	030	013								120
285-299	001	024	045	041	021								132
300-314	002	032	052	036	012	001							135
315-329		058	065	050	010	002							185
330-344		078	080	058	006	003	005						230
345-359		064	090	061	012	003	002						232
	9	1169		179		39		1		0			2992
		869		680		41		5		0		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 31/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 70 . 140 . 210 . 280 . 350 .
7	0	0	
21	0	0	
35	1	0	
49	0	0	
63	5	0	*
77	7	0	*
91	49	2	*******
105	92	3	*************
119	174	6	**************************
133	196	7	*****************************
147	284	9	**
161	194	6	*****************************
175	226	8	**********************************
189	243	8	************************************
203	180	6	**************************
217	223	7	**********************************
231	173	6	*************************
245	151	5	**********************
259	185	6	***************************
273	104	3	***************
287	106	4	***************
301	69	2	**********
315	83	3	************
329	39	1	******
343	51	2	*******
357	23	1	***
371	21	1	***
385	22	1	***
399	11	0	**
413	10	0	*
427	8	0	*
441	7	0	*
455	2	0	
469	7	0	*
483	3	0	
497	12	0	**
511	5	0	*
525	10	0	*
539	7	0	*
553	4	0	*

NO. OF SAMPLES OVER 560 = 5
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2992
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M. START DATE 31/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	179	6	**********
15	155	5	*********
25	144	5	*********
35	62	2	**********
45	43	1	*********
55	42	1	********
65	48	2	**********
75	53	2	**********
85	70	2	**********
95	66	2	**********
105	78	3	**********
115	70	2	**********
125	77	3	**********
135	100	3	**********
145	76	3	**********
155	93	3	**********
165	67	2	**********
175	70	2	**********
185	66	2	**********
195	56	2	**********
205	59	2	**********
215	48	2	**********
225	44	1	*********
235	34	1	*******
245	48	2	**********
255	51	2	**********
265	64	2	**********
275	79	3	**********
285	86	3	**********
295	93	3	**********
305	92	3	**********
315	97	3	**********
325	131	4	**********
335	150	5	**********
345	159	5	**********
355	142	5	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

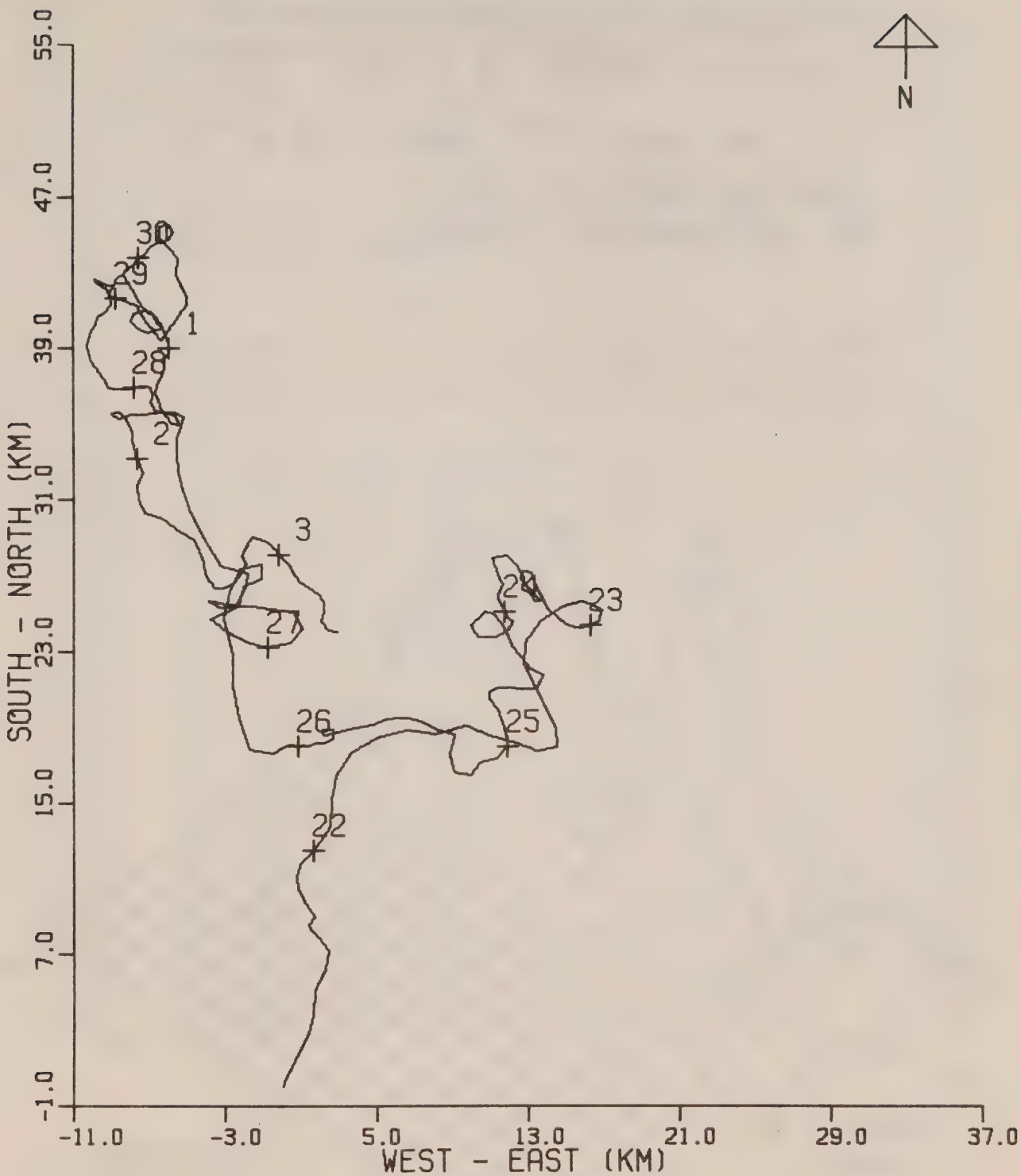
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2992
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M. START DATE 31/08/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	50 100 150 200 250
9.54	6	0	*
9.62	9	0	**
9.70	19	1	****
9.78	157	5	**********
9.86	115	4	********
9.94	121	4	********
10.02	115	4	********
10.10	120	4	********
10.18	179	6	**********
10.26	142	5	**********
10.34	212	7	**********
10.42	79	3	**********
10.50	93	3	**********
10.58	54	2	**********
10.66	52	2	**********
10.74	113	4	**********
10.82	73	2	**********
10.90	107	4	**********
10.98	54	2	**********
11.06	82	3	**********
11.14	33	1	*******
11.22	65	2	**********
11.30	58	2	**********
11.38	58	2	**********
11.46	104	3	**********
11.54	78	3	**********
11.62	126	4	**********
11.70	74	2	**********
11.78	99	3	**********
11.86	67	2	**********
11.94	41	1	********
12.02	50	2	**********
12.10	27	1	*****
12.18	55	2	**********
12.26	35	1	*******
12.34	44	1	*********
12.42	15	1	***
12.50	20	1	****
12.58	21	1	****
12.66	8	0	**

NO. OF SAMPLES OVER 12.70 = 11
NO. OF SAMPLES UNDER 9.50 = 1
TOTAL NO. OF OBSERVATIONS = 2992
SAMPLE INTERVAL = 10 MINUTES



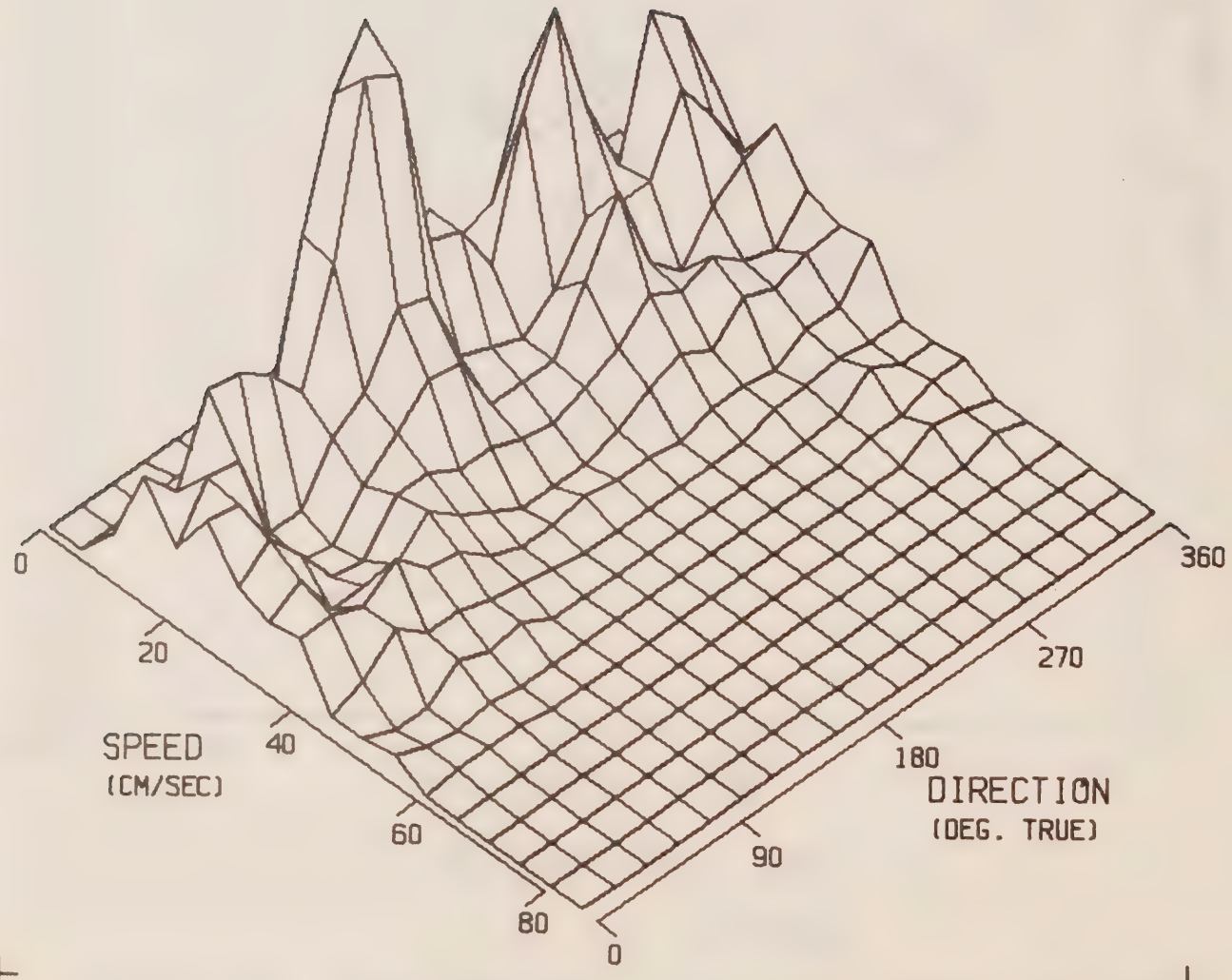
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 21/ 9/72 ENDING DATE: 3/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 21/ 9/72
NO. OF SAMPLES = 1752



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE:21/ 9/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		014	013	015	015	009	004						70
15- 29		006	023	026	013	007		002					77
30- 44		015	023	014	008	013		001					74
45- 59	002	014	015	002	005	010	001						49
60- 74	001	013	008	004	006	012	004	001					49
75- 89		019	003	002	008	006							38
90-104		011	009	009	008	006	003						46
105-119	001	031	020	014	010	003							79
120-134	003	055	019	010	003	003							93
135-149	001	077	030	018	003	002							131
150-164	003	096	028	011	001								139
165-179	003	033	025	009	001								71
180-194	004	020	009	008	001								42
195-209	002	032	013	004	001								52
210-224	001	019	010	009									39
225-239	001	026	005	011	006								49
240-254	002	040	020	011	004								77
255-269	004	046	033	027	006	002							118
270-284	007	032	024	014	005	001							83
285-299	006	022	012	014	005	004							63
300-314	006	018	020	010	007	001	002						64
315-329	001	025	033	012	006	008	001	004					90
330-344	002	025	030	011	014	003	005	003					93
345-359	001	015	014	023	009	001	002	001					66
	51	439		145		22		0		0			1752
		704		288		91		12		0		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 21/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
8	0	0	
24	0	0	
40	6	0	*
56	17	1	***
72	28	2	******
88	67	4	**********
104	134	8	**********
120	150	9	**********
136	171	10	**********
152	182	10	**********
168	126	7	**********
184	97	6	**********
200	87	5	**********
216	78	4	**********
232	80	5	**********
248	46	3	*********
264	73	4	**********
280	41	2	********
296	63	4	**********
312	36	2	*******
328	42	2	********
344	26	1	*****
360	36	2	*******
376	22	1	****
392	26	1	*****
408	24	1	*****
424	20	1	****
440	22	1	****
456	6	0	*
472	12	1	**
488	8	0	**
504	4	0	*
520	3	0	*
536	4	0	*
552	3	0	*
568	2	0	
584	5	0	*
600	3	0	*
616	0	0	
632	2	0	

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1752
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 21/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	54	3	******************
15	39	2	*************
25	59	3	********************
35	55	3	******************
45	35	2	************
55	32	2	***********
65	35	2	************
75	25	1	********
85	26	1	*********
95	32	2	***********
105	43	2	***************
115	56	3	********************
125	58	3	********************
135	69	4	************************
145	96	5	**********************************
155	104	6	**************************************
165	60	3	*********************
175	41	2	**************
185	29	2	**********
195	29	2	**********
205	36	2	************
215	27	2	*********
225	22	1	*******
235	42	2	***************
245	49	3	*****************
255	70	4	************************
265	81	5	****************************
275	54	3	******************
285	44	3	***************
295	42	2	***************
305	44	3	***************
315	44	3	***************
325	70	4	************************
335	58	3	********************
345	51	3	******************
355	41	2	**************
365	0	0	
375	0	0	
385	0	0	
395	0	0	

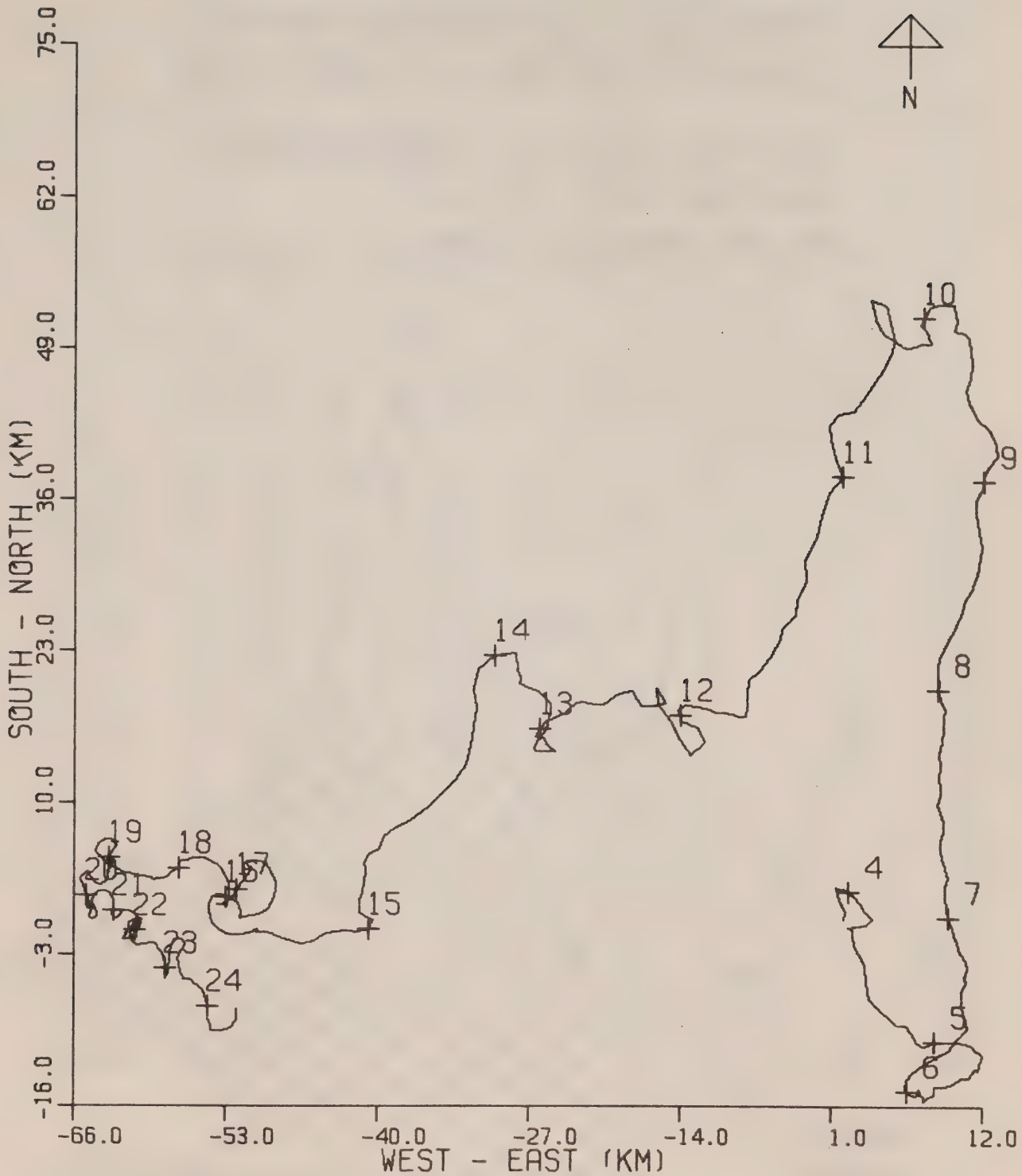
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1752
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 21/09/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 30 . 60 . 90 . 120 . 150 .
8.85	3	0	*
8.95	0	0	
9.05	2	0	*
9.15	1	0	
9.25	9	1	***
9.35	16	1	*****
9.45	28	2	*********
9.55	55	3	******************
9.65	92	5	**********************************
9.75	100	6	************************************
9.85	108	6	**************************************
9.95	113	6	***************************************
10.05	108	6	**************************************
10.15	111	6	***************************************
10.25	79	5	****************************
10.35	73	4	**************************
10.45	77	4	****************************
10.55	82	5	*****************************
10.65	46	3	****************
10.75	67	4	************************
10.85	35	2	************
10.95	22	1	*******
11.05	16	1	*****
11.15	12	1	****
11.25	11	1	****
11.35	16	1	*****
11.45	29	2	**********
11.55	27	2	*********
11.65	18	1	******
11.75	6	0	**
11.85	5	0	**
11.95	5	0	**
12.05	19	1	******
12.15	88	5	*******************************
12.25	161	9	***
12.35	74	4	**************************
12.45	38	2	*************
12.55	0	0	
12.65	0	0	
12.75	0	0	

NO. OF SAMPLES OVER 12.80 = 0
NO. OF SAMPLES UNDER 8.80 = 0
TOTAL NO. OF OBSERVATIONS = 1752
SAMPLE INTERVAL = 10 MINUTES



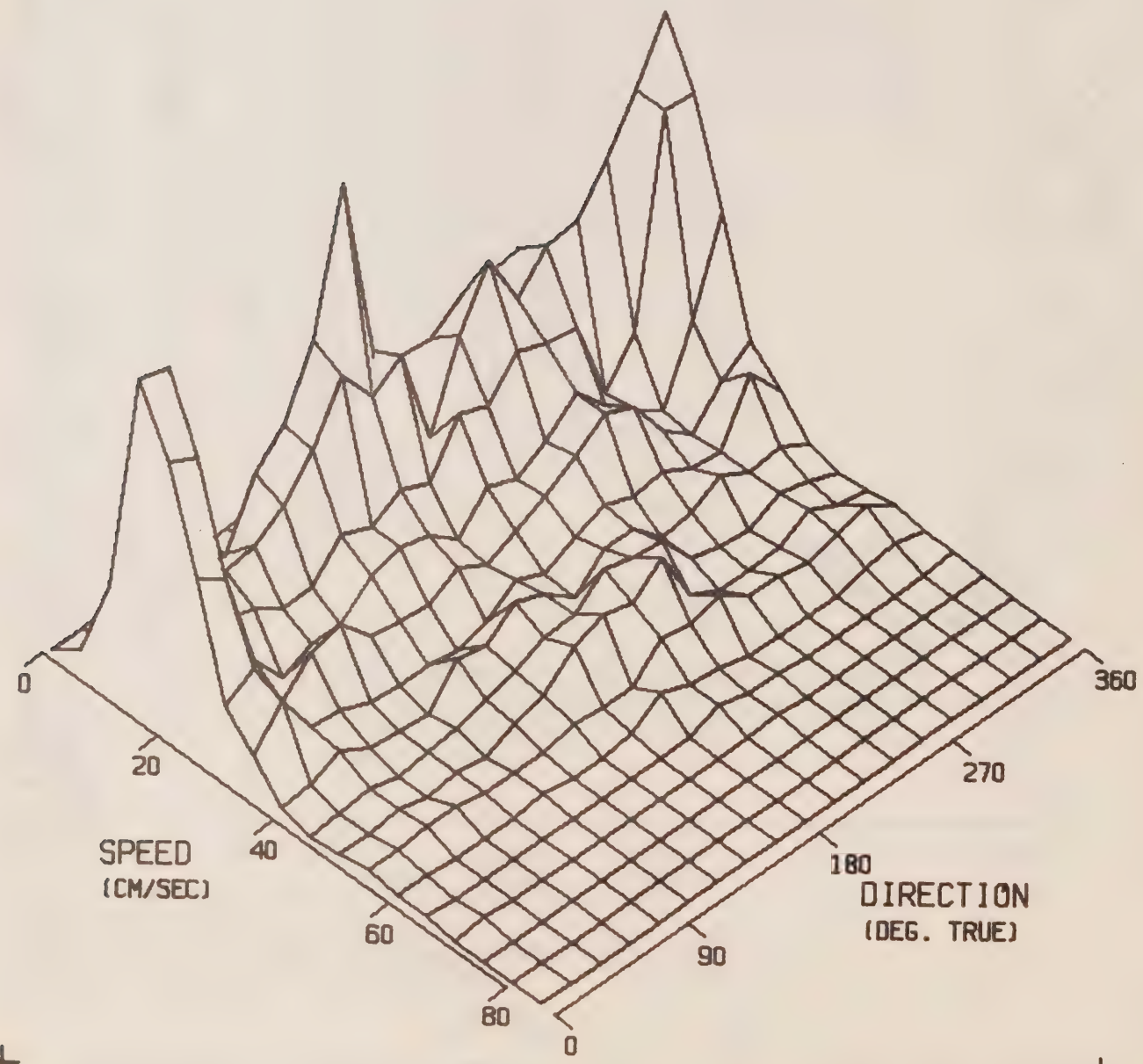
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 3/10/72 ENDING DATE: 24/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 3/10/72
NO. OF SAMPLES = 2991



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE: 3/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	004	061	086	031	011	002	001		001				197
15- 29	006	075	079	033	015	001	002	002					213
30- 44	003	028	020	017	009	003	002	001					83
45- 59		017	016	008	007	002	002	001					53
60- 74	002	026	016	012	010			001					67
75- 89	002	025	012	017	001	002	002						61
90-104	006	026	016	010	002	002	001	001					64
105-119	002	056	018	008	002	001							87
120-134	004	048	022	018	008	008	006						114
135-149	005	064	016	015	002	010	004						116
150-164	010	085	027	014	005	010	009	002					162
165-179	005	068	026	011	007	016	011	001					145
180-194	004	042	023	011	008	015	009	006	001				119
195-209	006	032	030	016	004	018	016	005					127
210-224	005	043	031	018	012	020	011	007	002				149
225-239	004	046	037	024	013	014	015	002					155
240-254	002	061	038	026	011	008	009	002	001				158
255-269	002	045	029	029	009	006	003						123
270-284	001	050	046	025	008	004	003	001					138
285-299	004	052	023	015	011	003	002	002					112
300-314	002	042	013	009	007	003	003	003					82
315-329	002	050	029	003	006	006	007	003					106
330-344	002	051	065	009	021	003	005	004					160
345-359	005	058	074	043	012	001	002	005					200
	88	792		201		125		5		0			2991
	1151		422		158		49		0		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 03/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70 140 210 280 350
8	0	0	
24	1	0	
40	9	0	*
56	26	1	****
72	52	2	*******
88	143	5	**********
104	207	7	**********
120	294	10	**********
136	287	10	**********
152	220	7	**********
168	203	7	**********
184	170	6	**********
200	174	6	**********
216	160	5	**********
232	113	4	**********
248	69	2	**********
264	84	3	**********
280	74	2	**********
296	96	3	**********
312	71	2	**********
328	56	2	**********
344	43	1	******
360	36	1	*****
376	39	1	******
392	31	1	****
408	27	1	****
424	28	1	****
440	33	1	*****
456	38	1	*****
472	28	1	****
488	34	1	*****
504	20	1	***
520	30	1	****
536	21	1	***
552	32	1	*****
568	14	0	**
584	7	0	*
600	7	0	*
616	6	0	*
632	3	0	

NO. OF SAMPLES OVER 640 = 5
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2991
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 03/10/72

MEDIAN (DEG.T)	FREQUNCY NO.	PCT	50 100 150 200 250
5	141	5	**********
15	150	5	**********
25	125	4	*********
35	57	2	********
45	43	1	*******
55	37	1	******
65	44	1	*******
75	47	2	*******
85	32	1	*****
95	46	2	*******
105	45	2	*******
115	63	2	**********
125	70	2	**********
135	79	3	**********
145	89	3	**********
155	95	3	**********
165	121	4	**********
175	86	3	**********
185	85	3	**********
195	85	3	**********
205	79	3	**********
215	94	3	**********
225	100	3	**********
235	108	4	**********
245	105	4	**********
255	92	3	**********
265	87	3	**********
275	96	3	**********
285	80	3	**********
295	66	2	**********
305	56	2	********
315	48	2	********
325	86	3	**********
335	102	3	**********
345	136	5	**********
355	116	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

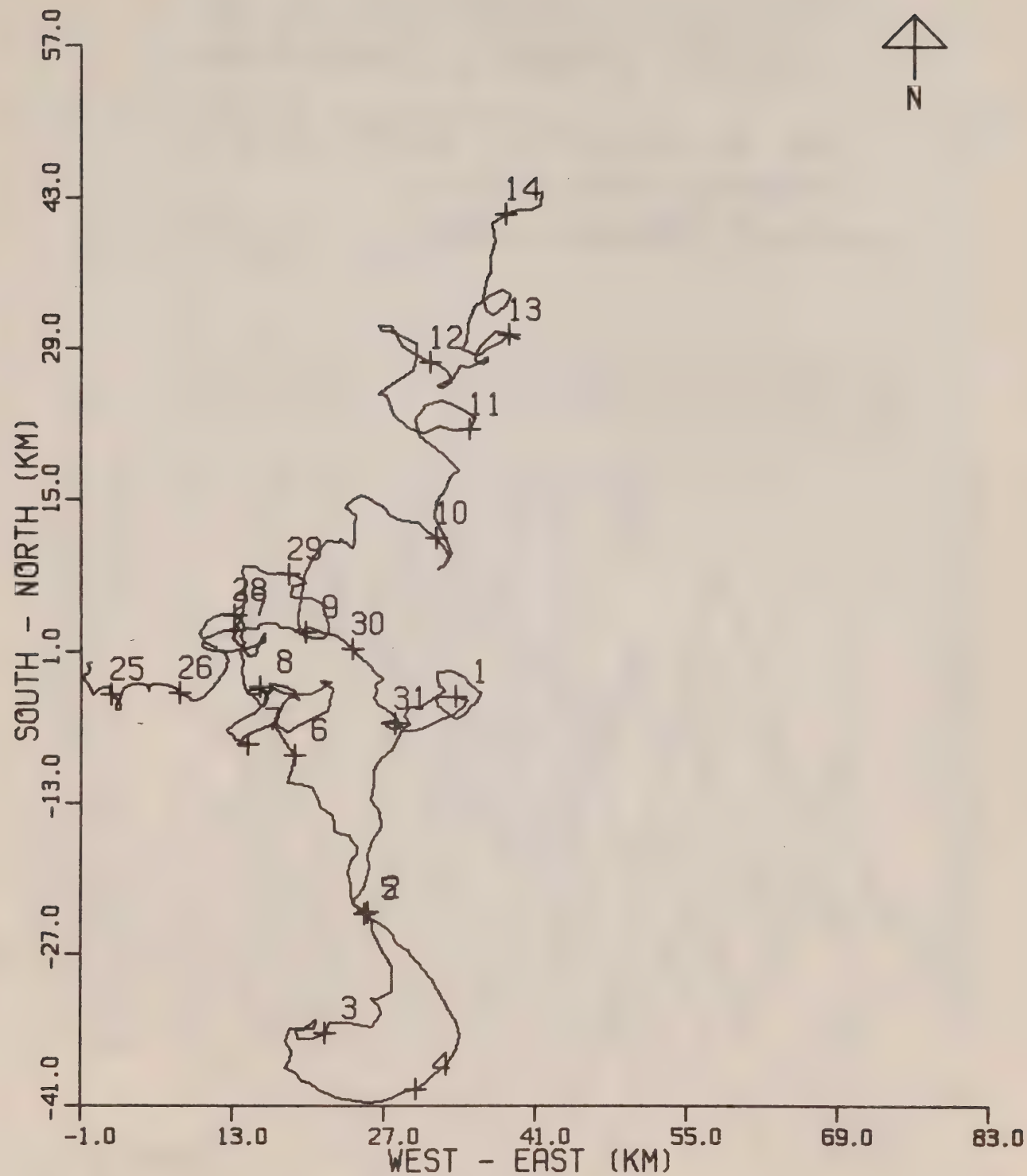
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2991
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 03/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	80 160 240 320 400
8.62	0	0	
8.66	0	0	
8.70	14	0	**
8.74	15	1	**
8.78	14	0	**
8.82	44	1	******
8.86	19	1	**
8.90	49	2	******
8.94	51	2	******
8.98	65	2	********
9.02	50	2	******
9.06	54	2	*******
9.10	121	4	**********
9.14	58	2	*******
9.18	79	3	**********
9.22	129	4	**********
9.26	173	6	**********
9.30	412	14	**********
9.34	200	7	**********
9.38	196	7	**********
9.42	157	5	**********
9.46	360	12	**********
9.50	68	2	*********
9.54	23	1	***
9.58	25	1	***
9.62	23	1	***
9.66	72	2	*********
9.70	75	3	*********
9.74	79	3	**********
9.78	40	1	*****
9.82	45	2	******
9.86	81	3	**********
9.90	41	1	*****
9.94	31	1	****
9.98	28	1	****
10.02	30	1	****
10.06	26	1	***
10.10	14	0	**
10.14	9	0	*
10.18	8	0	*

NO. OF SAMPLES OVER 10.20 = 13
NO. OF SAMPLES UNDER 8.60 = 0
TOTAL NO. OF OBSERVATIONS = 2991
SAMPLE INTERVAL = 10 MINUTES



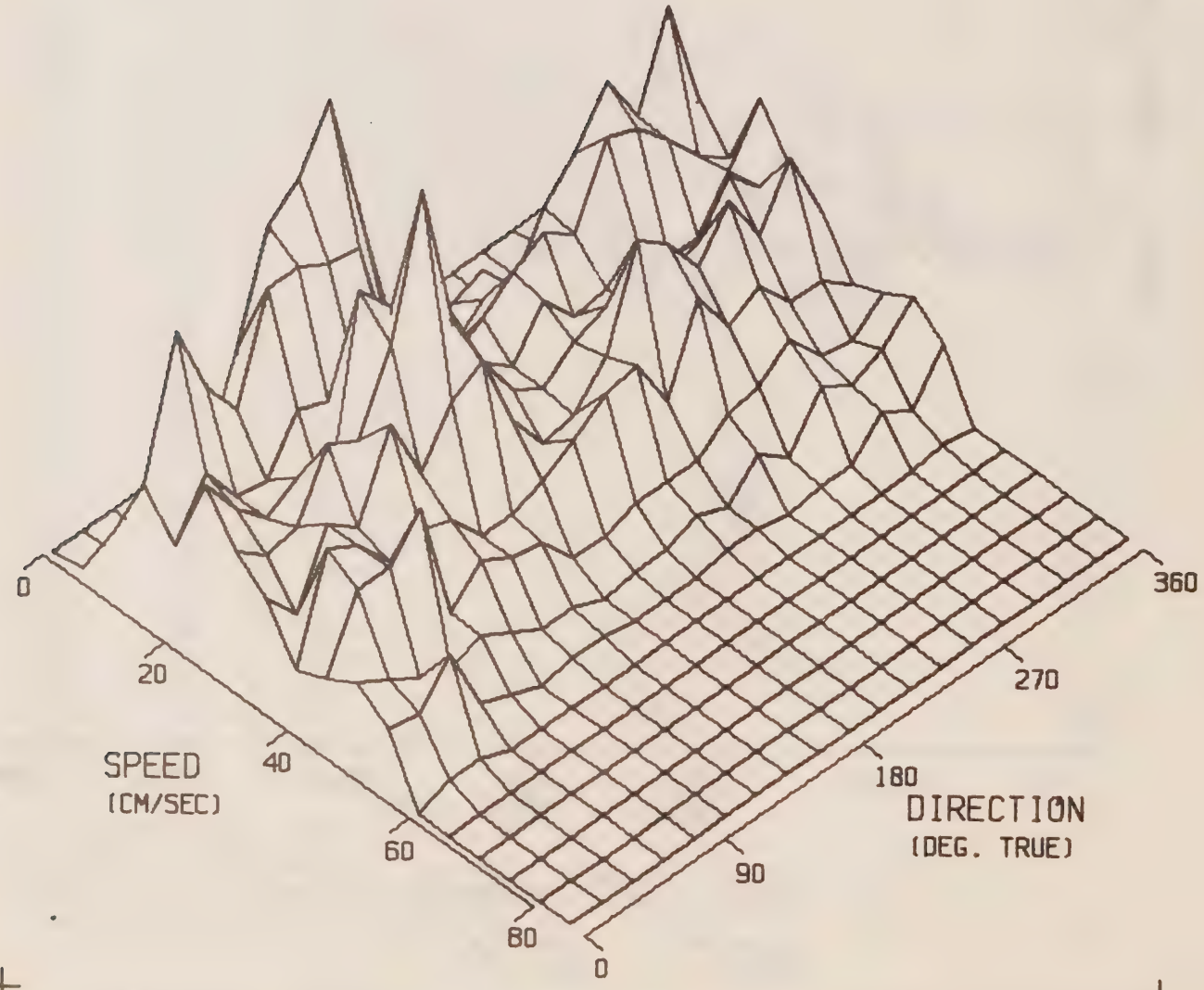
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 24/10/72 ENDING DATE: 14/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 24/10/72
NO. OF SAMPLES = 3000



STN. NO. HS=3 DEPTH 10 M.

STARTING DATE:24/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	001	022	028	032	017	014	013	004					131
15- 29	001	032	029	022	015	029	014	003					145
30- 44		017	022	018	027	025	014	004					127
45- 59		022	015	027	021	027	013	002					127
60- 74		024	026	025	022	020	005						122
75- 89		047	024	024	034	014	007						150
90-104	001	052	025	042	023	011	003						157
105-119	003	061	026	067	026	017	006						206
120-134	005	052	024	056	032	011	001						181
135-149	008	060	026	031	027	013							165
150-164	002	040	016	038	017	004							117
165-179		019	016	027	015	009	001						87
180-194		012	010	017	019	009							67
195-209		012	017	015	020	009	001						74
210-224	002	012	017	026	025	009	001						92
225-239		014	025	024	023	007	003						96
240-254		017	024	023	039	006	002						111
255-269		009	025	011	035	015	003						98
270-284		022	035	024	025	009	003						118
285-299	001	017	033	021	030	023	004						129
300-314		021	047	017	029	012	011	001					138
315-329	002	017	028	025	018	016	006	001					113
330-344	001	024	033	028	033	010	006	002					137
345-359		023	022	023	017	012	013	002					112
	27	593		589		130		0		0			3000
	648		663		331		19		0		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 24/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
8	0	0	
24	2	0	*
40	2	0	*
56	8	0	**
72	15	1	****
88	85	3	**********
104	135	5	**********
120	135	5	**********
136	142	5	**********
152	151	5	**********
168	138	5	**********
184	130	4	**********
200	132	4	**********
216	105	4	**********
232	121	4	**********
248	90	3	**********
264	128	4	**********
280	132	4	**********
296	144	5	**********
312	136	5	**********
328	131	4	**********
344	136	5	**********
360	140	5	**********
376	102	3	**********
392	104	3	**********
408	53	2	**********
424	72	2	**********
440	56	2	**********
456	69	2	**********
472	57	2	**********
488	39	1	**********
504	34	1	**********
520	24	1	******
536	25	1	******
552	14	0	****
568	8	0	**
584	3	0	*
600	2	0	*
616	0	0	
632	0	0	

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 24/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30	60	90	120	150
5	92	3	**********				
15	98	3	**********				
25	91	3	**********				
35	87	3	**********				
45	89	3	**********				
55	82	3	**********				
65	85	3	**********				
75	87	3	**********				
85	103	3	**********				
95	104	3	**********				
105	132	4	**********				
115	129	4	**********				
125	121	4	**********				
135	124	4	**********				
145	94	3	**********				
155	83	3	**********				
165	69	2	**********				
175	54	2	**********				
185	41	1	**********				
195	49	2	**********				
205	48	2	**********				
215	61	2	**********				
225	66	2	**********				
235	59	2	**********				
245	72	2	**********				
255	83	3	**********				
265	61	2	**********				
275	75	3	**********				
285	78	3	**********				
295	96	3	**********				
305	88	3	**********				
315	80	3	**********				
325	76	3	**********				
335	85	3	**********				
345	93	3	**********				
355	65	2	**********				
365	0	0					
375	0	0					
385	0	0					
395	0	0					

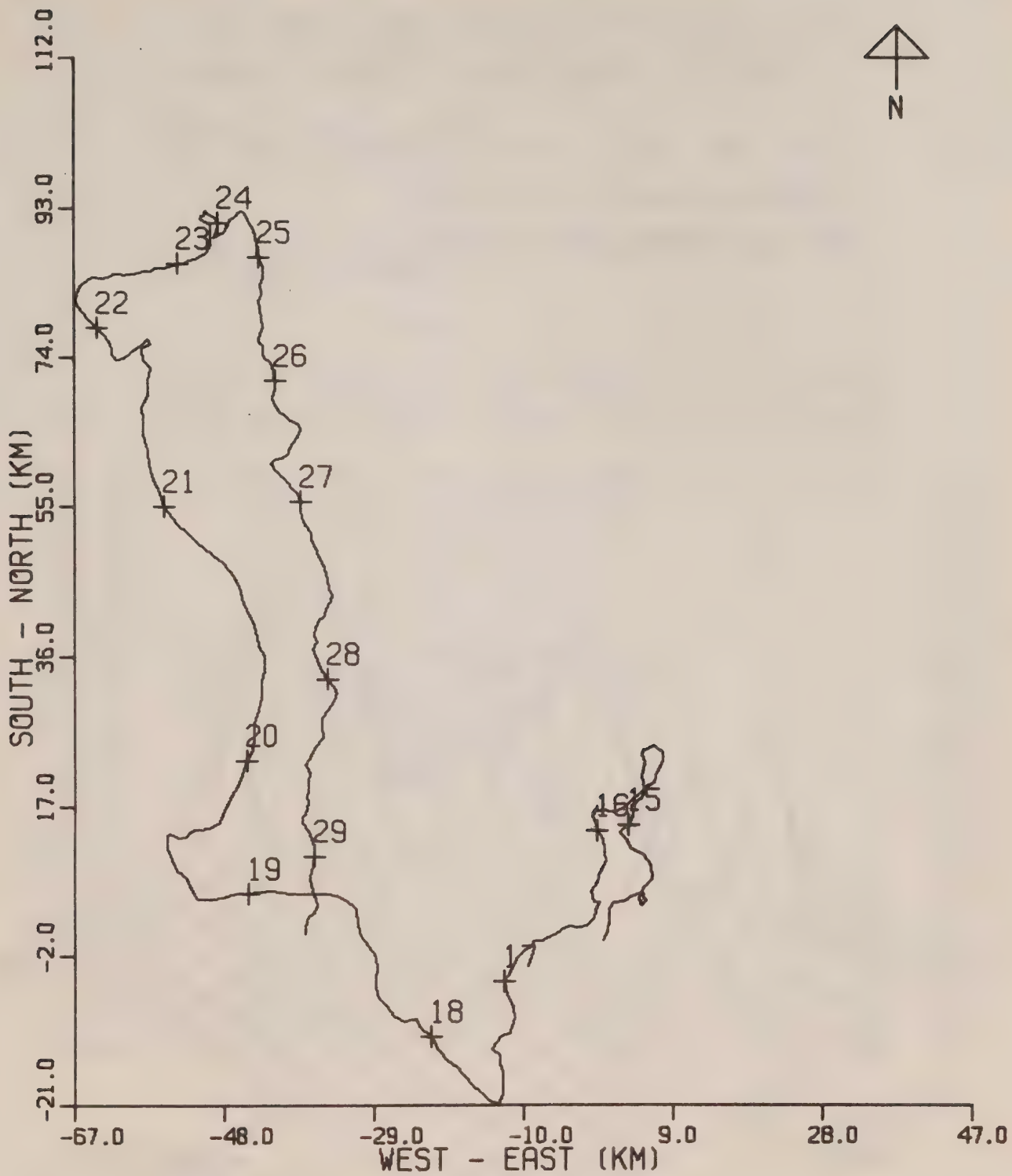
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 24/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	80 160 240 320 400
8.42	0	0	
8.46	0	0	
8.50	0	0	
8.54	3	0	
8.58	25	1	***
8.62	76	3	**********
8.66	76	3	**********
8.70	308	10	**********
8.74	165	6	**********
8.78	236	8	**********
8.82	391	13	**********
8.86	261	9	**********
8.90	359	12	**********
8.94	96	3	**********
8.98	41	1	*****
9.02	56	2	*******
9.06	73	2	*********
9.10	99	3	**********
9.14	21	1	***
9.18	38	1	*****
9.22	49	2	******
9.26	71	2	*********
9.30	160	5	**********
9.34	74	2	*********
9.38	92	3	**********
9.42	77	3	**********
9.46	108	4	**********
9.50	29	1	****
9.54	11	0	*
9.58	5	0	*
9.62	0	0	
9.66	0	0	
9.70	0	0	
9.74	0	0	
9.78	0	0	
9.82	0	0	
9.86	0	0	
9.90	0	0	
9.94	0	0	
9.98	0	0	

NO. OF SAMPLES OVER 10.00 = 0
NO. OF SAMPLES UNDER 8.40 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES



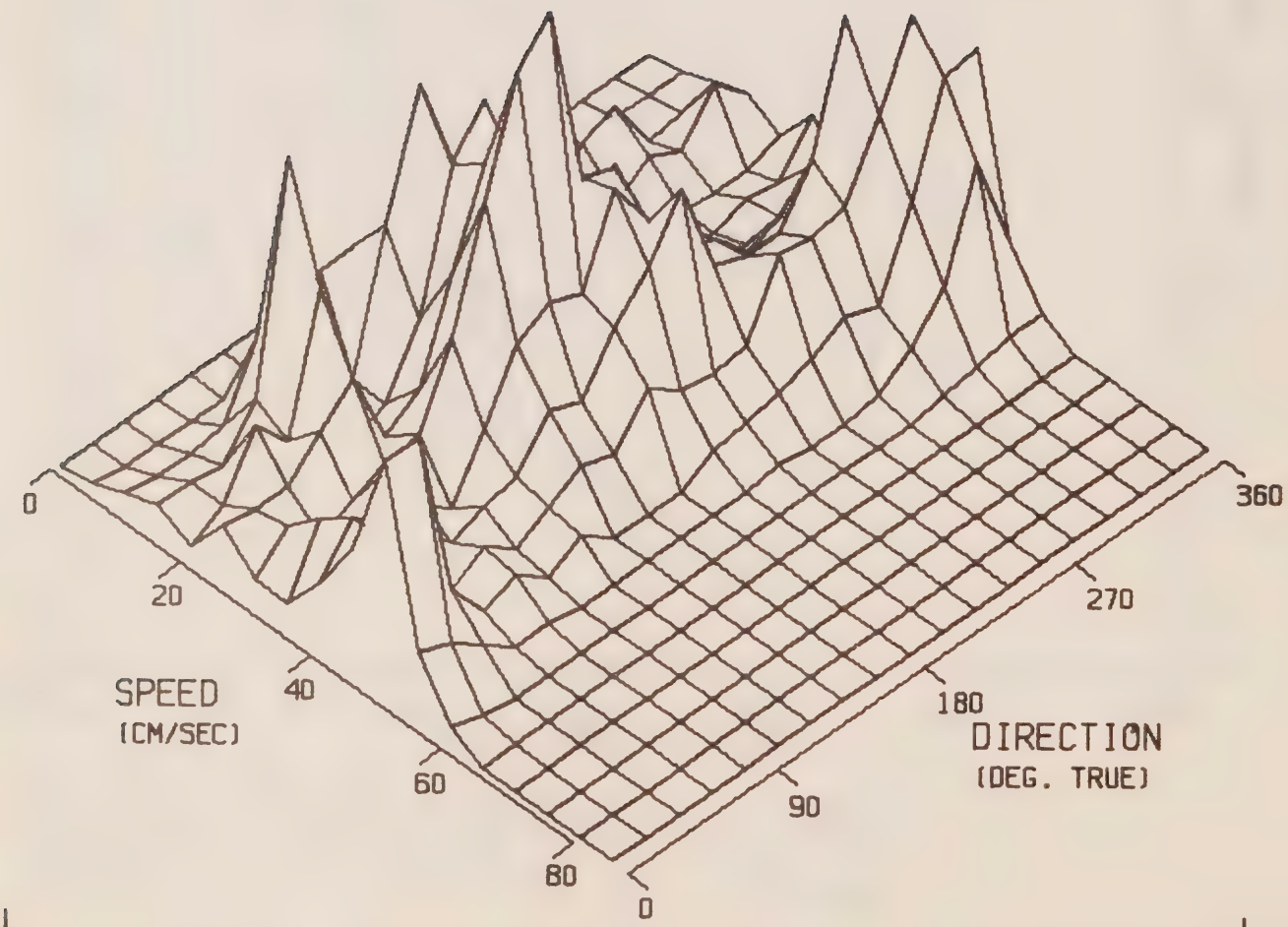
STN. NO. HS-3

DEPTH 10 M.

STARTING DATE: 14/11/72 ENDING DATE: 29/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 10 M.
STARTING DATE: 14/11/72
NO. OF SAMPLES = 2218



STN. NO. HS-3 DEPTH 10 M.

STARTING DATE:14/11/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		002	003	007	004	024	031	002					73
15- 29		005	007	012	024	025	030	001					104
30- 44		004	015	004	014	019	012	001					69
45- 59		001	010	009	004	005	003						32
60- 74		018	022	019	020	004	003						86
75- 89		029	036	013	002	007	005						92
90-104		020	008	008	006	003	001						46
105-119	002	012		014	006	003	002						39
120-134	006	022	005	028	019	005	002						87
135-149	001	019	023	045	021	015							124
150-164	001	033	037	060	028	005							164
165-179		033	032	061	020	013							159
180-194	002	017	029	057	035	016							156
195-209	001	016	043	029	032	017	002						140
210-224		004	020	032	044	011	002						113
225-239		001	009	029	026	016	005						86
240-254		001	008	024	018	017	004						72
255-269		003		016	012	026	004						61
270-284		007	002	001	012	023	005						50
285-299		011	002	005	009	027	004						58
300-314		005	003	004	020	034	014	001					81
315-329	001	003		004	014	059	019	003					103
330-344	001	010	002	005	013	041	034	008					114
345-359	001	007	003	010	006	032	042	008					109
	16		319		409		224		0		0		2218
		283		496		447		24		0		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 10M, START DATE 14/11/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT.	30 .	60 .	90 .	120 .	150 .
8	0	0					
24	1	0					
40	4	0	*				
56	9	0	***				
72	3	0	*				
88	26	1	*********				
104	47	2	*****************				
120	59	3	**********************				
136	60	3	**********************				
152	91	4	**********************************				
168	91	4	**********************************				
184	53	2	********************				
200	60	3	**********************				
216	70	3	**************************				
232	59	3	**********************				
248	61	3	**********************				
264	87	4	********************************				
280	108	5	**				
296	126	6	**				
312	100	5	**************************************				
328	88	4	*********************************				
344	77	3	****************************				
360	86	4	*********************************				
376	94	4	**********************************				
392	87	4	*********************************				
408	66	3	************************				
424	97	4	************************************				
440	88	4	*********************************				
456	80	4	******************************				
472	93	4	**********************************				
488	64	3	**********************				
504	73	3	***************************				
520	35	2	*************				
536	40	2	**************				
552	18	1	******				
568	8	0	***				
584	10	0	***				
600	0	0					
616	0	0					
632	0	0					

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2219
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 10M, START DATE 14/11/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	57	3	**********
15	51	2	**********
25	76	3	**********
35	53	2	**********
45	24	1	********
55	21	1	*******
65	48	2	**********
75	87	4	**********
85	47	2	**********
95	28	1	*********
105	23	1	********
115	32	1	**********
125	53	2	**********
135	73	3	**********
145	87	4	**********
155	112	5	**********
165	114	5	**********
175	104	5	**********
185	103	5	**********
195	96	4	**********
205	90	4	**********
215	75	3	**********
225	70	3	**********
235	55	2	**********
245	43	2	**********
255	43	2	**********
265	43	2	**********
275	32	1	**********
285	41	2	**********
295	36	2	**********
305	54	2	**********
315	66	3	**********
325	65	3	**********
335	75	3	**********
345	88	4	**********
355	54	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2219
SAMPLE INTERVAL = 10 MINUTES

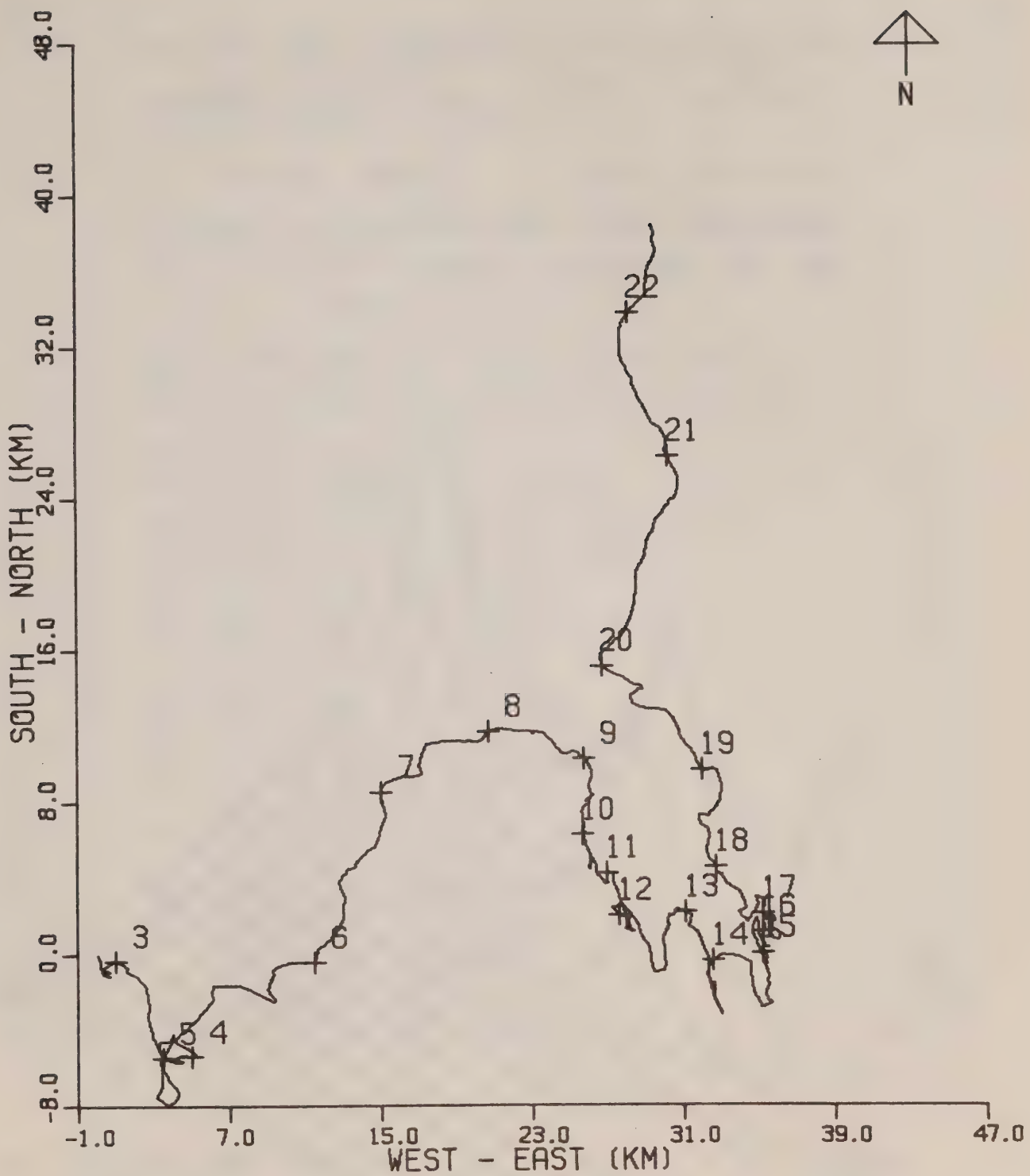
HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 10M, START DATE 14/11/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
7.72	0	0	
7.76	0	0	
7.80	1	0	
7.84	0	0	
7.88	8	0	**
7.92	31	1	******
7.96	26	1	*****
8.00	102	5	**********
8.04	81	4	**********
8.08	103	5	**********
8.12	186	8	**********
8.16	158	7	**********
8.20	231	10	**********
8.24	87	4	**********
8.28	82	4	**********
8.32	83	4	**********
8.36	72	3	**********
8.40	155	7	**********
8.44	80	4	**********
8.48	64	3	**********
8.52	60	3	**********
8.56	67	3	**********
8.60	120	5	**********
8.64	42	2	********
8.68	47	2	*********
8.72	39	2	********
8.76	36	2	*******
8.80	67	3	**********
8.84	43	2	*********
8.88	83	4	**********
8.92	51	2	**********
8.96	10	0	**
9.00	3	0	*
9.04	0	0	
9.08	0	0	
9.12	0	0	
9.16	0	0	
9.20	0	0	
9.24	0	0	
9.28	0	0	

NO. OF SAMPLES OVER 9.30 = 0
NO. OF SAMPLES UNDER 7.70 = 1
TOTAL NO. OF OBSERVATIONS = 2219
SAMPLE INTERVAL = 10 MINUTES

DATA FOR 30-METRE DEPTH



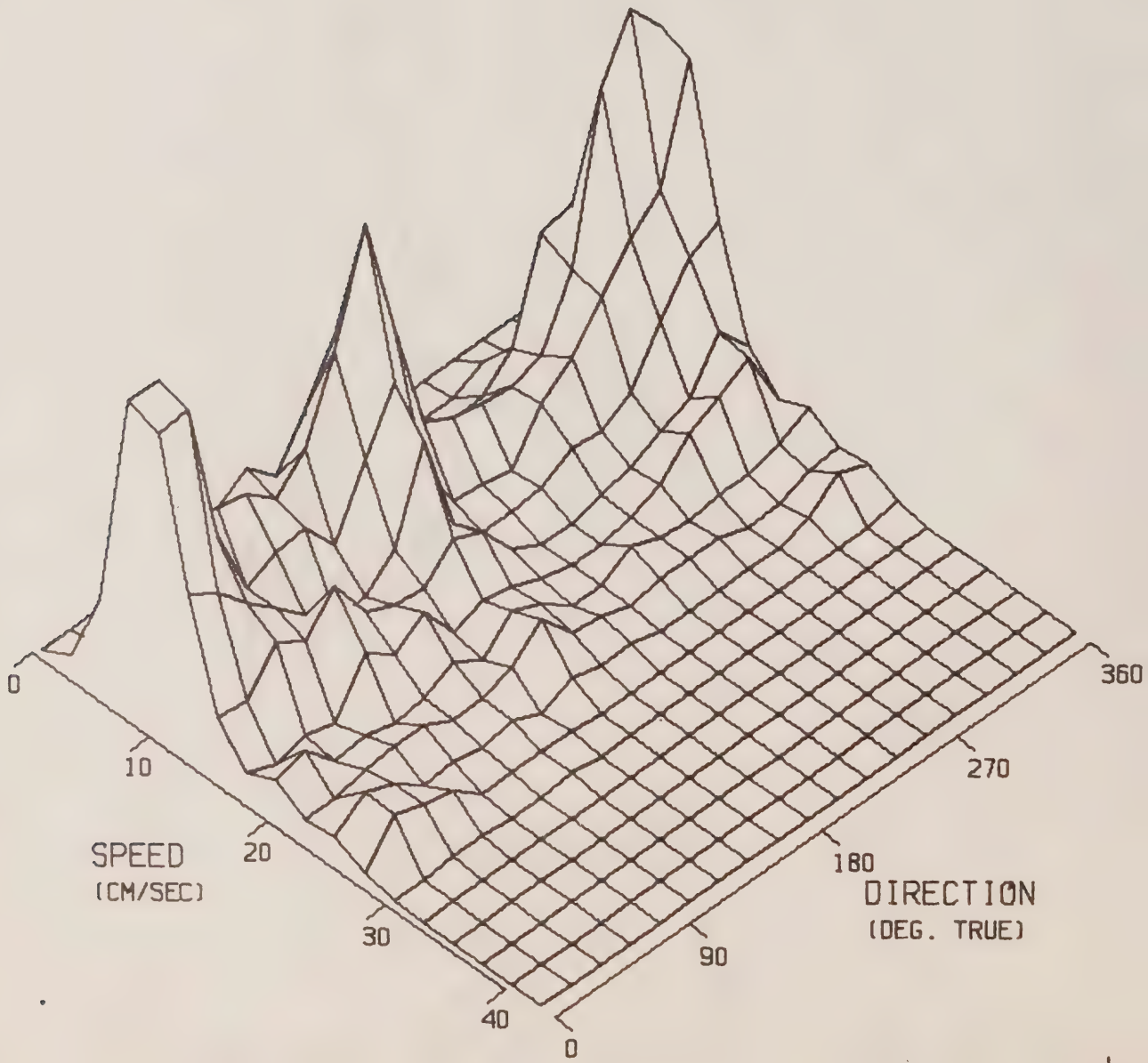
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 2/ 5/72 ENDING DATE: 22/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 2/ 5/72
NO. OF SAMPLES = 2903



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE: 2/ 5/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	003	042	095	026	007	006	010						189
15- 29	001	067	105	024	009	008	016	001					231
30- 44		037	061	033	005	007	012						155
45- 59	002	033	039	029	004	009	012	003					131
60- 74		039	026	021	007	011	006	001					111
75- 89	001	038	031	029	009	005	002						115
90-104	001	042	027	021	013	004	002						110
105-119	003	039	024	015	009	004	004						98
120-134		045	023	010	015	007	003	001					104
135-149	003	039	061	017	006	005							131
150-164	004	089	065	030	011	014	004						217
165-179	001	076	044	023	007	012							163
180-194	002	043	021	012	004	005	002						89
195-209	001	029	007	008	003	004	002						54
210-224		019	011	003	002	001							36
225-239	001	014	003	004	001	004							27
240-254		018	010	001	004	003							36
255-269	001	009	020	006	004	002							42
270-284	002	020	018	009	005	004							58
285-299	004	030	038	008	010	002							92
300-314		054	047	018	008	002	001						130
315-329	001	071	061	025	016	002	002						178
330-344		053	076	029	022	004	003						187
345-359	001	061	094	034	014	005	010						219
	32	1007		195		91		0		0			2903
		1007		435		130		6		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 02/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70	140	210	280	350
4	0	0					
12	0	0					
20	7	0	*				
28	16	1	**				
36	36	1	*****				
44	137	5	**********				
52	203	7	**********				
60	222	8	**********				
68	285	10	**********				
76	133	5	**********				
84	291	10	**********				
92	261	9	**********				
100	165	6	**********				
108	151	5	**********				
116	139	5	**********				
124	103	4	**********				
132	99	3	**********				
140	100	3	**********				
148	76	3	**********				
156	57	2	********				
164	50	2	*******				
172	50	2	*******				
180	31	1	****				
188	34	1	*****				
196	30	1	****				
204	36	1	*****				
212	25	1	****				
220	26	1	****				
228	31	1	****				
236	22	1	***				
244	16	1	**				
252	25	1	****				
260	9	0	*				
268	17	1	**				
276	14	0	**				
284	3	0					
292	3	0					
300	0	0					
308	0	0					
316	0	0					

NO. OF SAMPLES OVER 320 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2903
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 02/05/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	144	5	**********
15	149	5	**********
25	145	5	**********
35	94	3	*******
45	94	3	*******
55	84	3	******
65	71	2	*****
75	76	3	******
85	88	3	*******
95	70	2	*****
105	67	2	*****
115	69	2	*****
125	65	2	*****
135	81	3	******
145	94	3	*******
155	149	5	**********
165	132	5	**********
175	88	3	*******
185	68	2	*****
195	36	1	***
205	36	1	***
215	23	1	**
225	19	1	**
235	21	1	**
245	22	1	**
255	26	1	**
265	35	1	***
275	38	1	***
285	47	2	****
295	66	2	*****
305	82	3	******
315	97	3	*******
325	129	4	**********
335	125	4	**********
345	142	5	**********
355	131	5	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

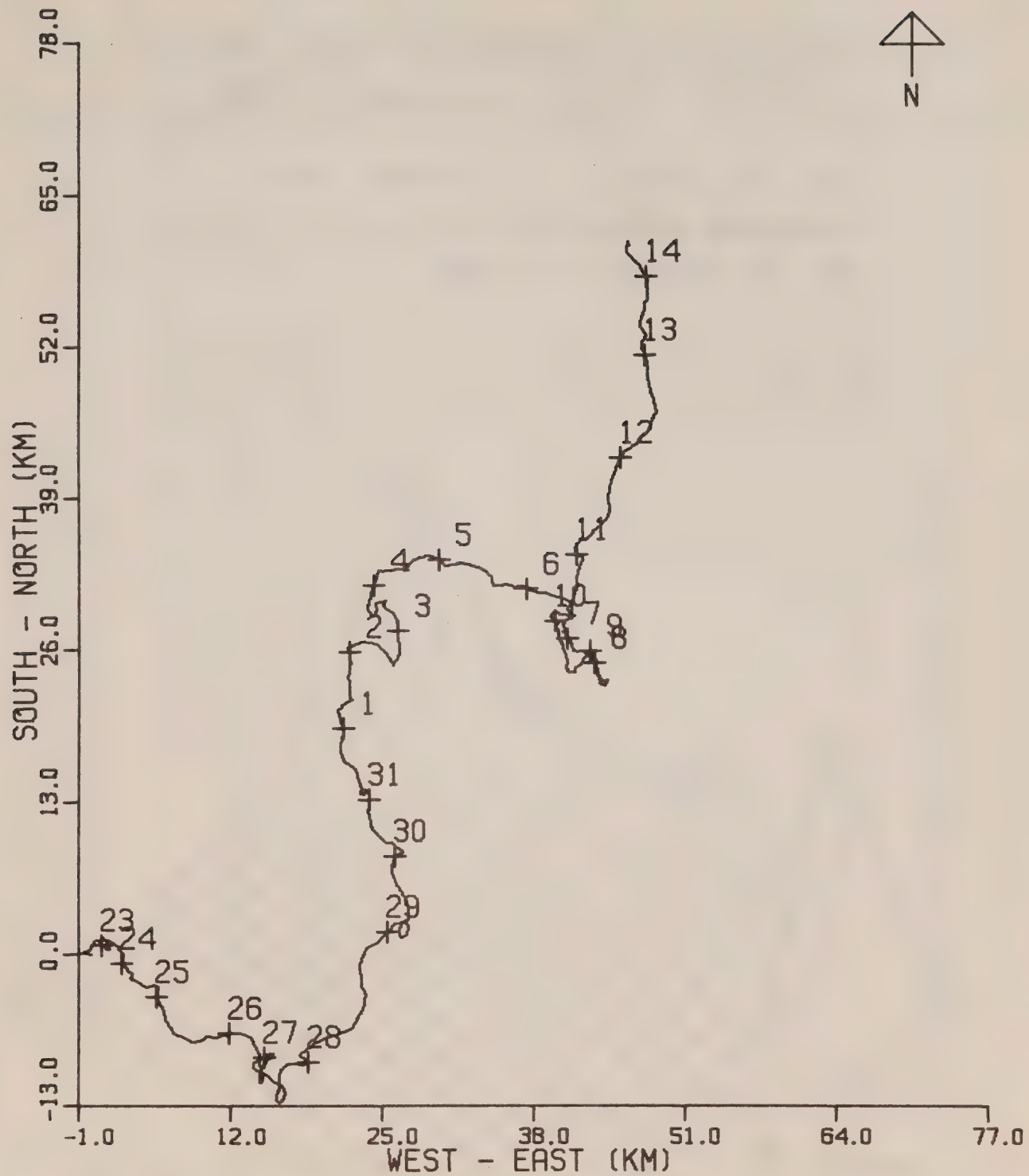
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2903
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 02/05/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 180 360 540 720 900
5.81	0	0	
5.83	0	0	
5.85	0	0	
5.87	0	0	
5.89	0	0	
5.91	0	0	
5.93	0	0	
5.95	0	0	
5.97	53	2	***
5.99	57	2	***
6.01	269	9	**********
6.03	417	14	**********
6.05	502	17	**********
6.07	629	22	**********
6.09	499	17	**********
6.11	0	0	
6.13	79	3	****
6.15	110	4	******
6.17	121	4	*******
6.19	79	3	****
6.21	31	1	**
6.23	33	1	**
6.25	24	1	*
6.27	0	0	
6.29	0	0	
6.31	0	0	
6.33	0	0	
6.35	0	0	
6.37	0	0	
6.39	0	0	
6.41	0	0	
6.43	0	0	
6.45	0	0	
6.47	0	0	
6.49	0	0	
6.51	0	0	
6.53	0	0	
6.55	0	0	
6.57	0	0	
6.59	0	0	

NO. OF SAMPLES OVER 6.60 = 0
NO. OF SAMPLES UNDER 5.80 = 0
TOTAL NO. OF OBSERVATIONS = 2903
SAMPLE INTERVAL = 10 MINUTES



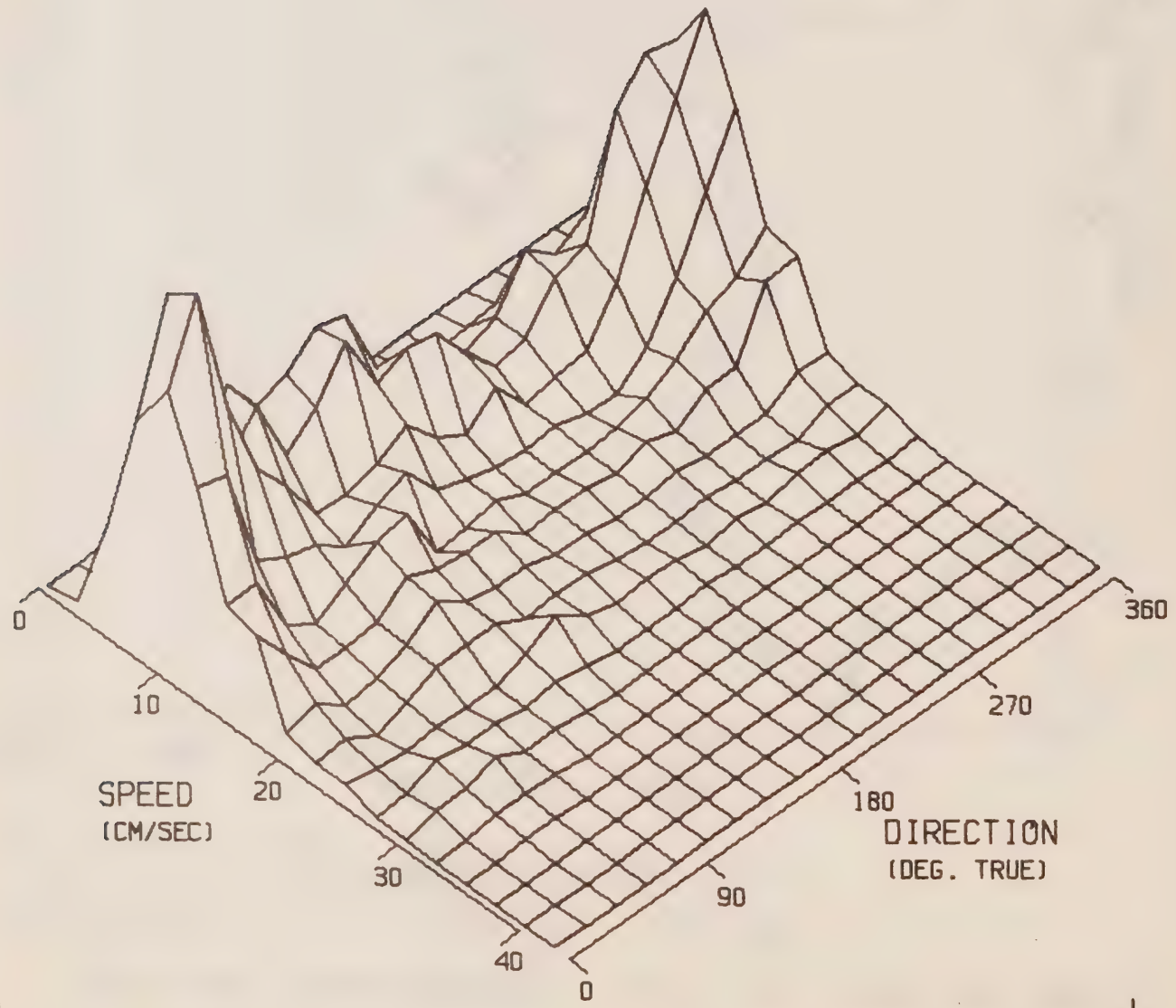
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 22/ 5/72 ENDING DATE: 14/ 6/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 22/ 5/72
NO. OF SAMPLES = 3298



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE:22/ 5/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14		059	118	055	020	006	005						263
15- 29	002	071	164	053	021	010	005	003					329
30- 44	002	064	113	022	008		003	003	001				216
45- 59	002	033	049	021	008	003	006	009	001				132
60- 74	003	043	059	009	006	006	004	004	002				136
75- 89	002	077	039	028	011	013	004	003					177
90-104	004	052	019	018	020	009	003	003					128
105-119	005	055	020	046	019	015	004	004					168
120-134	005	055	025	020	009	009	004	001					128
135-149	009	080	027	016	011	007	013						163
150-164	005	055	040	011	016	007	003						137
165-179	003	045	030	007	006	004	002						97
180-194	001	035	019	009	003	005	003						75
195-209		036	013	001	004	004	002						60
210-224		020	025	004	005	002	002						58
225-239		015	015	006	003	001	001						41
240-254		006	006	001	003	003							19
255-269	002	020	011	005	005	003	002						48
270-284	003	036	012	007	003	002	001						64
285-299	001	032	020	013	007	001	001						75
300-314	001	036	034	009	010	002	005						97
315-329	002	064	065	035	009		002						177
330-344	001	054	076	034	027	004	002						198
345-359	002	071	118	077	032	011	001						312
	55	1117		266		78		4		0			3298
	1114		507		127		30		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 22/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 70 . 140 . 210 . 280 . 350 .
4	0	0	
12	3	0	
20	12	0	**
28	22	1	***
36	57	2	********
44	115	3	**********
52	225	7	**********
60	263	8	**********
68	311	9	**********
76	161	5	**********
84	282	9	**********
92	245	7	**********
100	231	7	**********
108	200	6	**********
116	159	5	**********
124	134	4	**********
132	107	3	**********
140	76	2	**********
148	90	3	**********
156	100	3	**********
164	79	2	**********
172	55	2	********
180	62	2	*********
188	37	1	*****
196	33	1	*****
204	44	1	******
212	29	1	****
220	25	1	****
228	19	1	***
236	21	1	***
244	10	0	*
252	18	1	***
260	19	1	***
268	10	0	*
276	10	0	*
284	8	0	*
292	9	0	*
300	8	0	*
308	2	0	
316	3	0	

NO. OF SAMPLES OVER 320 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3298
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 22/05/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	176	5	**********
15	206	6	**********
25	221	7	**********
35	148	4	**********
45	113	3	**********
55	84	3	**********
65	91	3	**********
75	108	3	**********
85	116	4	**********
95	85	3	**********
105	98	3	**********
115	111	3	**********
125	85	3	**********
135	97	3	**********
145	111	3	**********
155	95	3	**********
165	70	2	**********
175	62	2	**********
185	50	2	**********
195	51	2	**********
205	36	1	**********
215	45	1	**********
225	25	1	**********
235	24	1	**********
245	15	0	**********
255	25	1	**********
265	31	1	**********
275	43	1	**********
285	40	1	**********
295	59	2	**********
305	58	2	**********
315	85	3	**********
325	133	4	**********
335	129	4	**********
345	174	5	**********
355	198	6	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

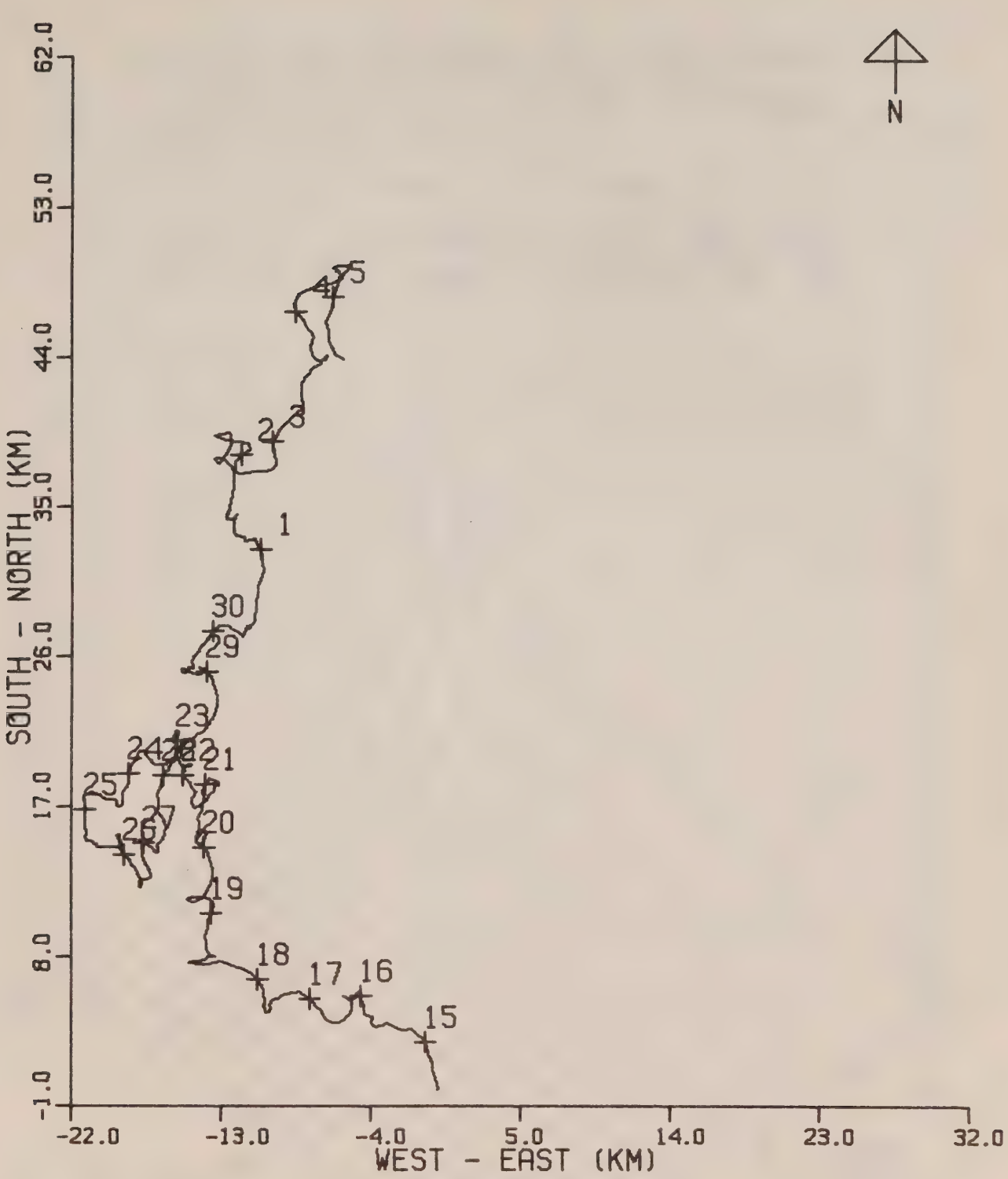
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3298
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 22/05/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 80 . 160 . 240 . 320 . 400 .
5.92	0	0	
5.96	0	0	
6.00	13	0	**
6.04	31	1	****
6.08	47	1	******
6.12	78	2	**********
6.16	287	9	************************************
6.20	236	7	******************************
6.24	135	4	******************
6.28	34	1	****
6.32	74	2	*********
6.36	110	3	***************
6.40	130	4	*****************
6.44	50	2	******
6.48	113	3	***************
6.52	85	3	************
6.56	102	3	**************
6.60	163	5	**********************
6.64	78	2	**********
6.68	143	4	*******************
6.72	78	2	**********
6.76	77	2	**********
6.80	70	2	*********
6.84	231	7	******************************
6.88	338	10	**
6.92	142	4	*******************
6.96	84	3	************
7.00	147	4	*******************
7.04	181	5	************************
7.08	34	1	****
7.12	5	0	*
7.16	2	0	
7.20	0	0	
7.24	0	0	
7.28	0	0	
7.32	0	0	
7.36	0	0	
7.40	0	0	
7.44	0	0	
7.48	0	0	

NO. OF SAMPLES OVER 7.50 = 0
NO. OF SAMPLES UNDER 5.90 = 0
TOTAL NO. OF OBSERVATIONS = 3298
SAMPLE INTERVAL = 10 MINUTES



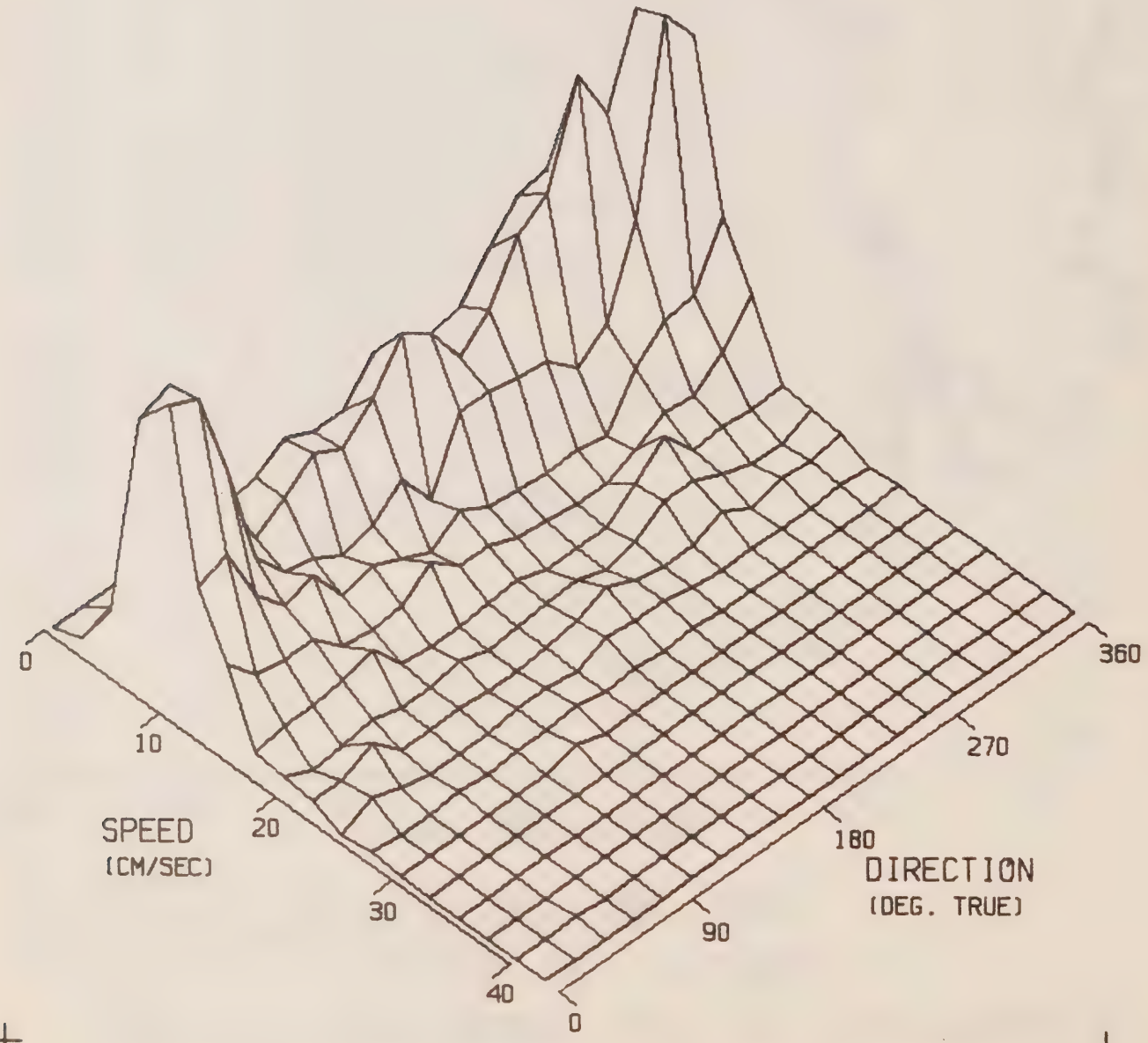
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 14/ 6/72 ENDING DATE: 5/ 7/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 14/ 6/72
NO. OF SAMPLES = 2984



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE:14/ 6/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	004	056	095	041	005	003	002						206
15- 29	005	066	101	037	005	004	004						222
30- 44	006	061	083	034	009	009	001						203
45- 59	002	045	033	011	003	003	001			001			99
60- 74	003	037	025	028	011	001		001					106
75- 89	004	028	035	007	011	001							86
90-104	004	032	024	008	003	001							72
105-119	002	039	013	013	003		002	004					76
120-134	002	043	017	015	001								78
135-149	001	037	018	013	001		002	001					73
150-164	002	041	027	007	001	001							79
165-179	010	051	021	012	003	002	001						100
180-194	003	063	015	008	002	003	005						99
195-209	006	048	033	004	001	007	002						101
210-224	003	045	024	003		004	002						81
225-239	006	044	031	003	001	003	002						90
240-254	005	048	030	004	003	001	001						92
255-269	003	070	030	003	012								118
270-284	007	073	031	006	010	007							134
285-299		072	033	012	009	006							132
300-314		096	048	014	005	001							164
315-329	001	068	069	016	005	003							162
330-344	002	069	103	019	003	003							199
345-359	001	050	115	032	009	004	001						212
	82	1054		116		26		0		0			2984
	1282		350		67		6		1		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 14/06/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 70 . 140 . 210 . 280 . 350 .
4	0	0	
12	2	0	
20	7	0	*
28	42	1	******
36	83	3	**********
44	164	5	************************
52	282	9	**
60	301	10	**
68	340	11	**
76	143	5	*********************
84	296	10	**
92	249	8	**************************************
100	221	7	**********************************
108	173	6	**************************
116	115	4	*****************
124	101	3	***************
132	81	3	************
140	81	3	************
148	50	2	*******
156	37	1	*****
164	37	1	*****
172	21	1	***
180	21	1	***
188	22	1	***
196	15	1	**
204	15	1	**
212	14	0	**
220	17	1	**
228	17	1	**
236	8	0	*
244	6	0	*
252	5	0	*
260	6	0	*
268	3	0	
276	2	0	
284	3	0	
292	1	0	
300	2	0	
308	0	0	
316	0	0	

NO. OF SAMPLES OVER 320 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2984
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 14/06/72

MEDIAN (DEG,T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	155	5	**********
15	137	5	*********
25	153	5	**********
35	149	5	**********
45	73	2	*****
55	72	2	*****
65	73	2	*****
75	56	2	****
85	55	2	****
95	52	2	****
105	43	1	***
115	58	2	****
125	48	2	****
135	55	2	****
145	45	2	***
155	53	2	****
165	55	2	****
175	81	3	*****
185	56	2	****
195	71	2	*****
205	67	2	*****
215	52	2	****
225	60	2	****
235	56	2	****
245	60	2	****
255	63	2	*****
265	93	3	******
275	83	3	*****
285	92	3	******
295	85	3	*****
305	122	4	********
315	106	4	*******
325	98	3	*******
335	137	5	**********
345	150	5	**********
355	120	4	********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

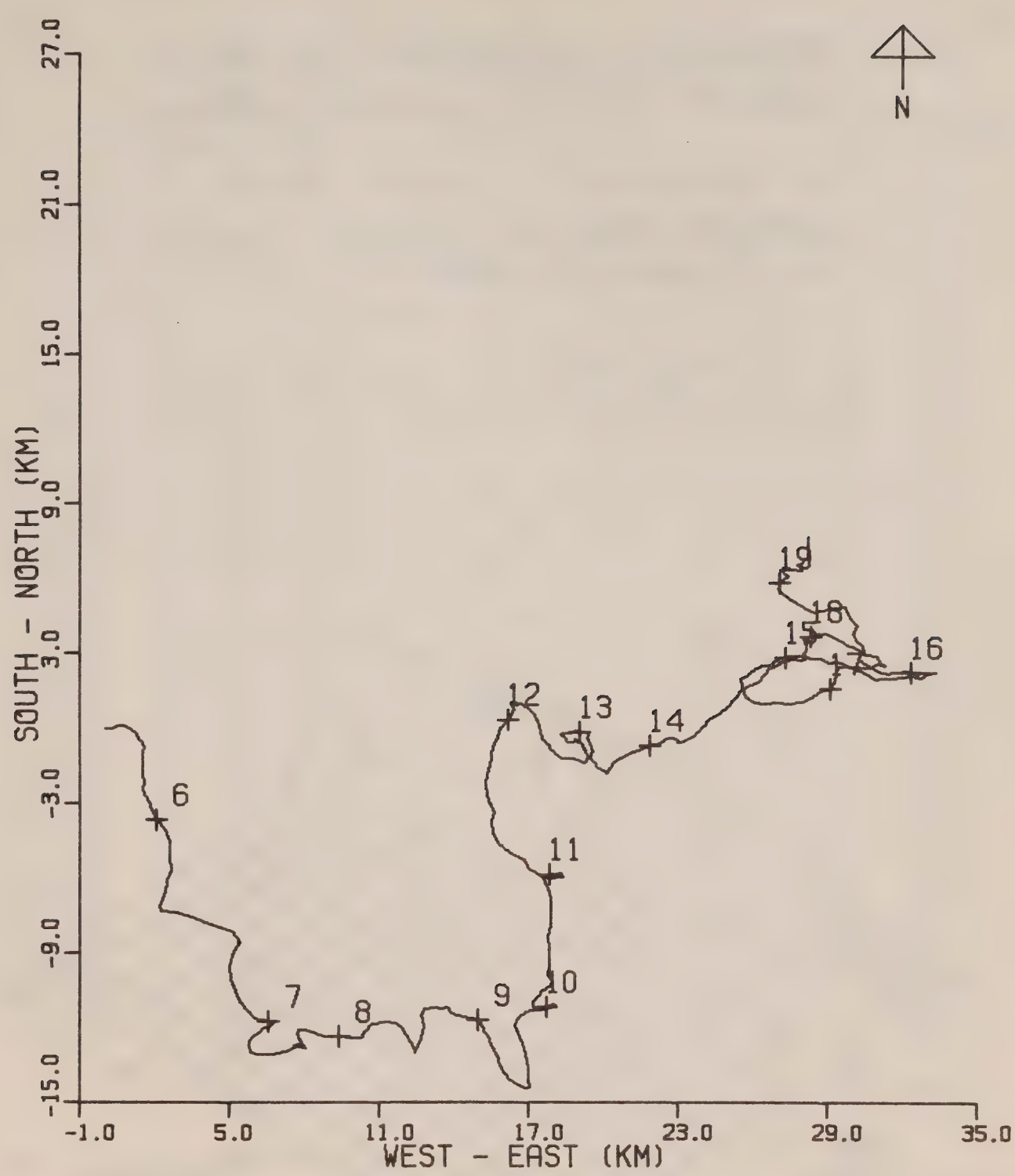
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2984
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 14/06/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	80 160 240 320 400
6.52	0	0	
6.56	5	0	*
6.60	38	1	*****
6.64	84	3	**********
6.68	181	6	************************
6.72	90	3	**********
6.76	128	4	*****************
6.80	112	4	***************
6.84	183	6	************************
6.88	284	10	**************************************
6.92	378	13	**
6.96	174	6	************************
7.00	153	5	********************
7.04	64	2	********
7.08	31	1	****
7.12	30	1	****
7.16	129	4	*****************
7.20	147	5	********************
7.24	123	4	****************
7.28	64	2	********
7.32	115	4	***************
7.36	173	6	************************
7.40	93	3	************
7.44	53	2	*******
7.48	46	2	******
7.52	55	2	*******
7.56	27	1	***
7.60	10	0	*
7.64	10	0	*
7.68	2	0	
7.72	1	0	
7.76	0	0	
7.80	0	0	
7.84	0	0	
7.88	0	0	
7.92	0	0	
7.96	0	0	
8.00	0	0	
8.04	0	0	
8.08	0	0	

NO. OF SAMPLES OVER 8.10 = 1
NO. OF SAMPLES UNDER 6.50 = 0
TOTAL NO. OF OBSERVATIONS = 2984
SAMPLE INTERVAL = 10 MINUTES



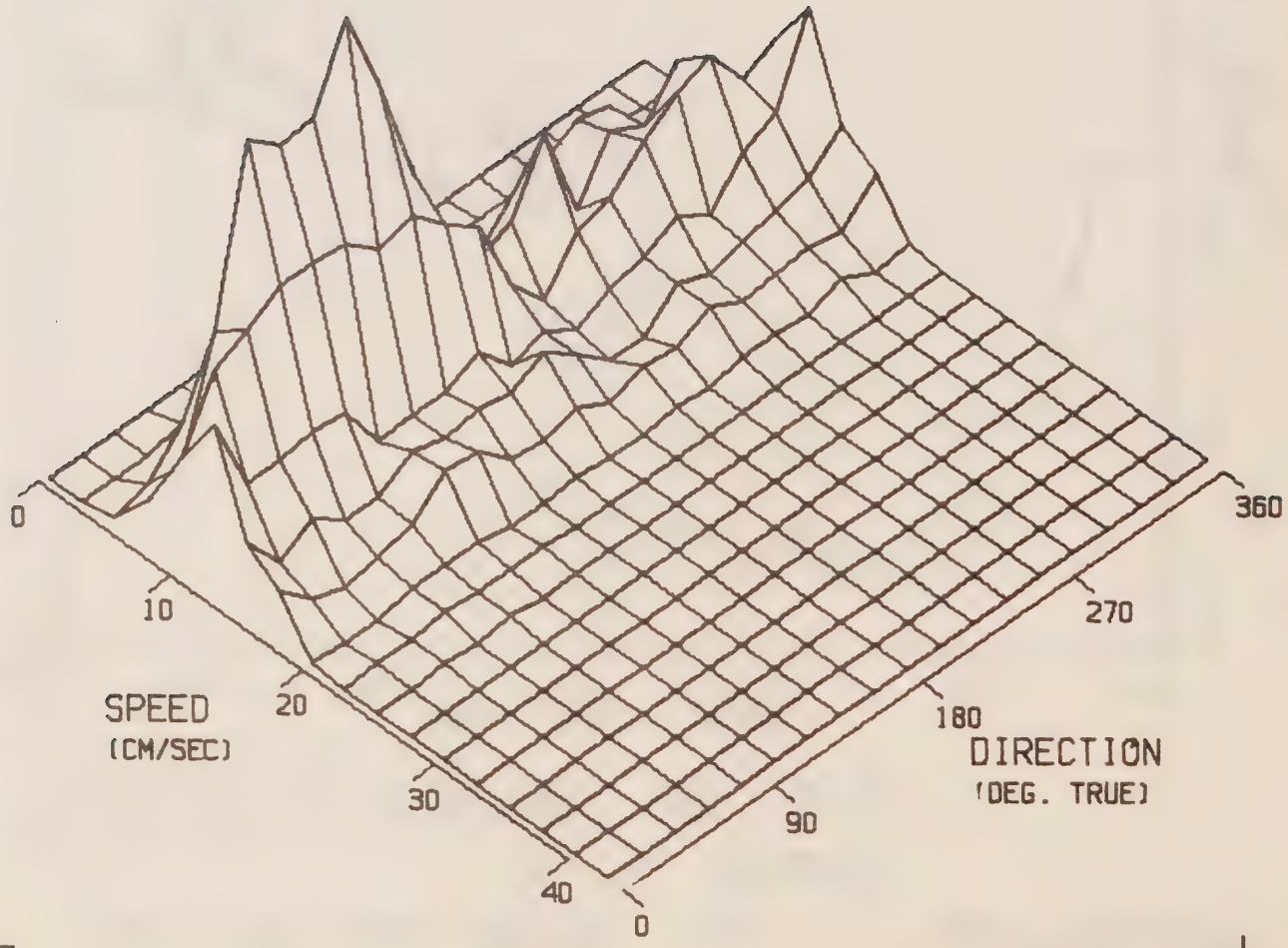
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 5/ 7/72 ENDING DATE: 19/ 7/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 5/ 7/72
NO. OF SAMPLES = 2035



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE: 5/ 7/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO
DIR	039	079	119	159	199	239	279	319	359	399	439	479	
0- 14		009	046	027	010								92
15- 29		010	048	010	002	001							71
30- 44		024	048	018			001						91
45- 59	001	047	063	016	003	003							133
60- 74	001	049	062	012	005	002							131
75- 89		064	064	011	006	001							146
90-104	001	063	056	014	010	002	001						147
105-119	001	063	061	008	011	001							145
120-134	003	058	049	010	006								126
135-149	002	039	065	018	004								128
150-164	001	028	052	010	002	001							94
165-179	001	015	030	017	005								68
180-194		007	036	009	005								57
195-209	001	004	015	009									29
210-224	001	011	007	002	004								25
225-239		013	014	001	003								31
240-254	001	021	030	005	005								62
255-269		017	017	012	007								53
270-284		026	027	015	006								74
285-299		021	027	007	004	001							60
300-314		019	040	008	004	001							72
315-329		018	033	017	006								74
330-344		014	028	023	002								67
345-359		005	020	025	009								59
	14		938		119		2		0		0		2035
		645		304		13		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 05/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
3	0	0	
9	0	0	
15	0	0	
21	0	0	
27	3	0	*
33	11	1	**
39	6	0	*
45	30	1	******
51	41	2	********
57	126	6	**************************
63	115	6	************************
69	213	10	**
75	114	6	************************
81	125	6	**************************
87	227	11	**
93	103	5	**********************
99	200	10	**
105	88	4	******************
111	141	7	******************************
117	54	3	***********
123	87	4	******************
129	27	1	*****
135	71	3	***************
141	28	1	******
147	51	3	**********
153	24	1	*****
159	16	1	***
165	40	2	********
171	16	1	***
177	28	1	******
183	12	1	**
189	16	1	***
195	5	0	*
201	3	0	*
207	4	0	*
213	1	0	
219	1	0	
225	5	0	*
231	0	0	
237	1	0	

NO. OF SAMPLES OVER 240 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2035
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 05/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	70	3	**********
15	50	2	********
25	45	2	*******
35	64	3	**********
45	73	4	**********
55	97	5	**********
65	88	4	**********
75	87	4	**********
85	102	5	**********
95	100	5	**********
105	92	5	**********
115	100	5	**********
125	89	4	**********
135	78	4	**********
145	78	4	**********
155	70	3	**********
165	50	2	********
175	46	2	*******
185	34	2	******
195	25	1	****
205	20	1	****
215	18	1	****
225	18	1	****
235	25	1	****
245	47	2	********
255	23	1	****
265	45	2	*******
275	44	2	*******
285	46	2	*******
295	48	2	********
305	39	2	******
315	59	3	**********
325	43	2	*******
335	41	2	*******
345	40	2	******
355	41	2	*******
365	0	0	
375	0	0	
385	0	0	
395	0	0	

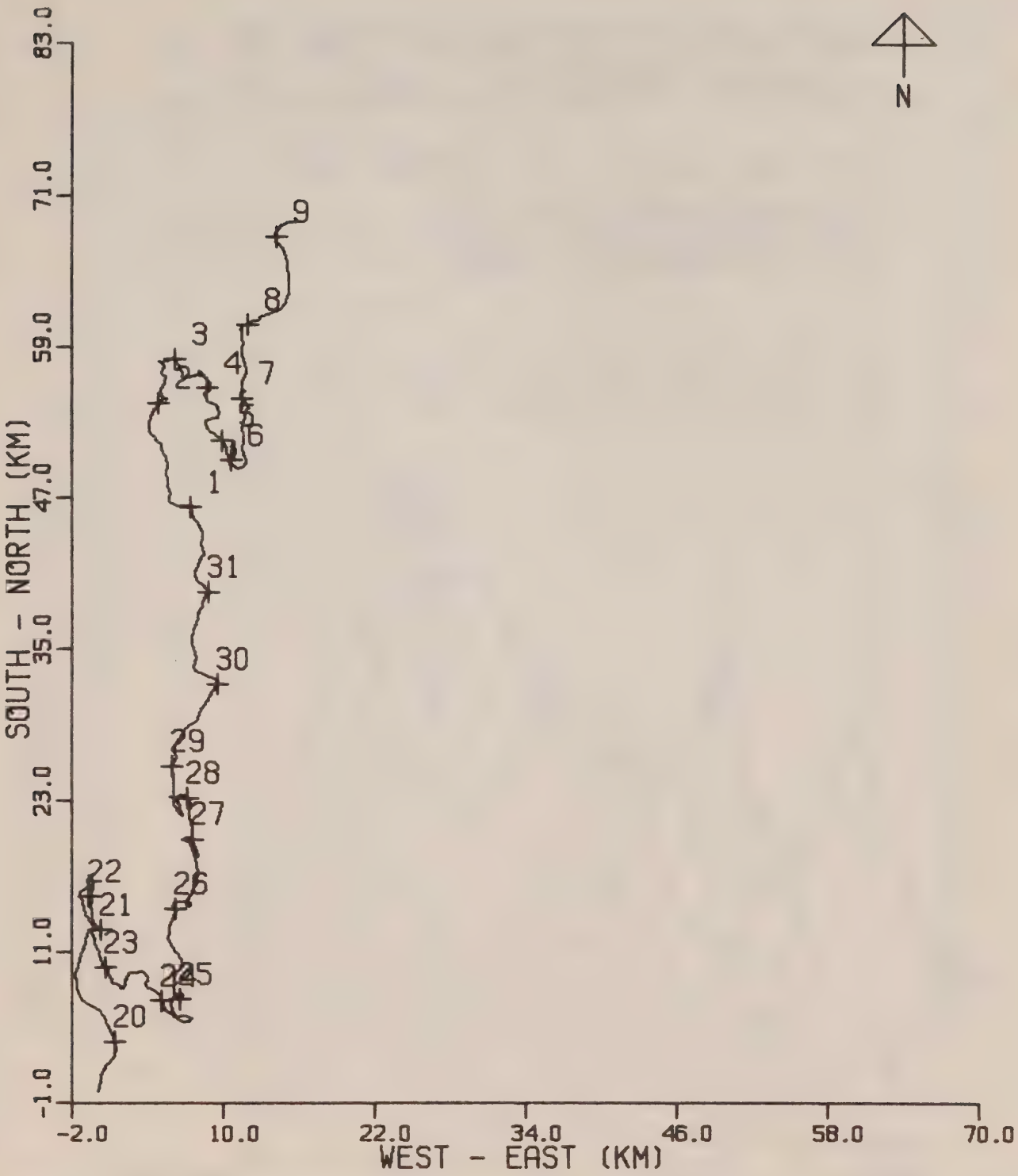
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2035
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 05/07/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	70 140 210 280 350
6.42	0	0	
6.46	0	0	
6.50	0	0	
6.54	0	0	
6.58	0	0	
6.62	0	0	
6.66	0	0	
6.70	0	0	
6.74	0	0	
6.78	0	0	
6.82	0	0	
6.86	1	0	
6.90	4	0	*
6.94	5	0	*
6.98	23	1	***
7.02	81	4	**********
7.06	103	5	**********
7.10	62	3	*********
7.14	225	11	**********
7.18	332	16	**********
7.22	257	13	**********
7.26	94	5	**********
7.30	147	7	**********
7.34	179	9	**********
7.38	101	5	**********
7.42	124	6	**********
7.46	32	2	*****
7.50	41	2	******
7.54	70	3	**********
7.58	74	4	**********
7.62	14	1	**
7.66	27	1	****
7.70	31	2	****
7.74	6	0	*
7.78	1	0	
7.82	0	0	
7.86	0	0	
7.90	0	0	
7.94	0	0	
7.98	0	0	

NO. OF SAMPLES OVER 8.00 = 1
NO. OF SAMPLES UNDER 6.40 = 0
TOTAL NO. OF OBSERVATIONS = 2035
SAMPLE INTERVAL = 10 MINUTES



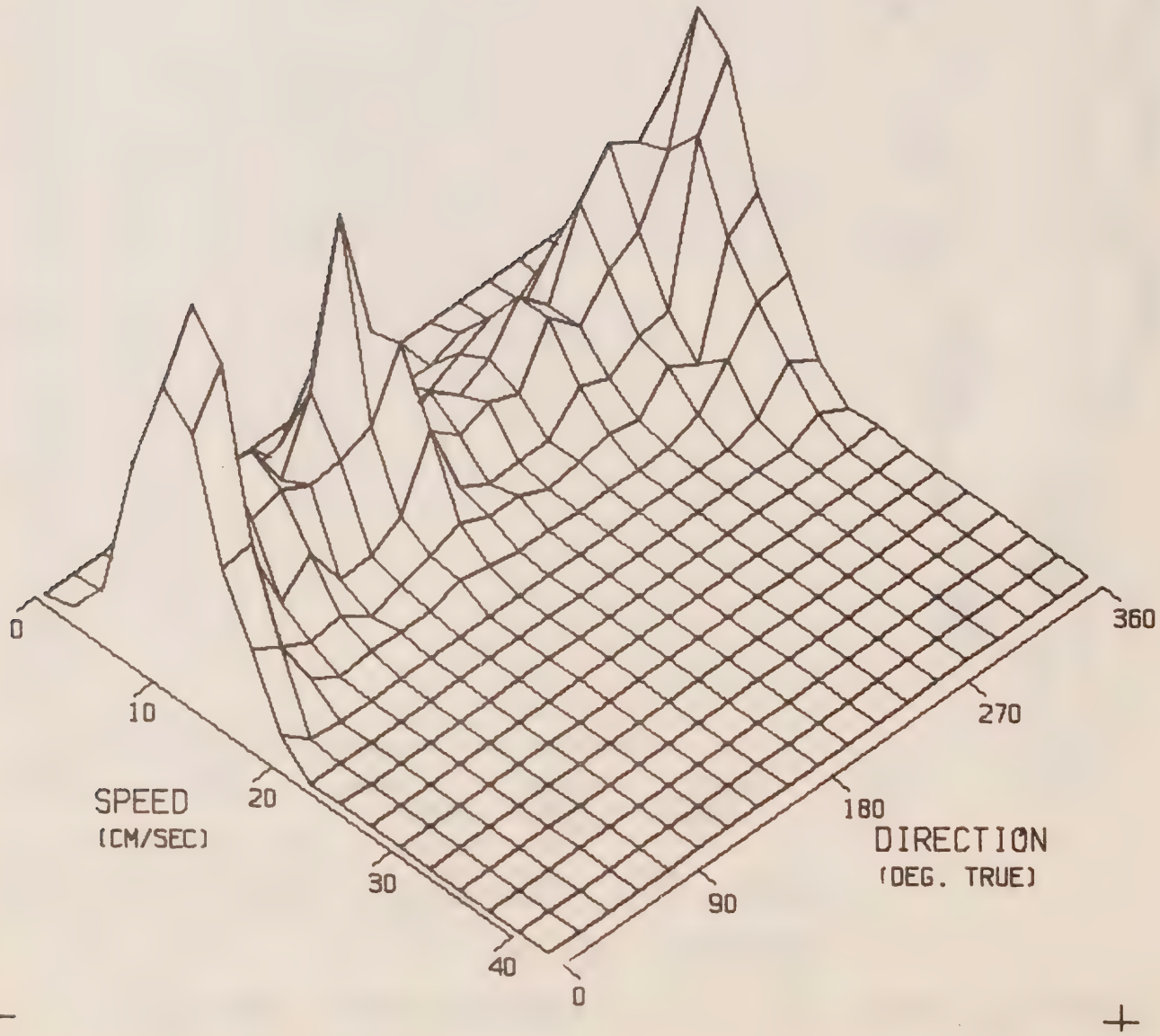
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 19/ 7/72 ENDING DATE: 9/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 19/ 7/72
NO. OF SAMPLES = 2983



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE:19/ 7/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	002	039	138	075	035	001							290
15- 29	001	051	165	107	018								342
30- 44		037	072	033	008								150
45- 59		033	056	012	003								104
60- 74		039	039	011									89
75- 89		048	049	014	003								114
90-104	001	033	035	007	001								77
105-119	001	035	031	004	002								73
120-134	001	053	054	007	002								117
135-149	002	088	055	010	004								159
150-164	003	075	083	026	004								191
165-179	001	017	048	013									79
180-194		013	018	004	001								36
195-209		013	016	006	001								36
210-224		009	016	003									28
225-239		021	016	001	001								39
240-254	003	029	017	005									54
255-269	001	024	039	010									74
270-284		016	028	004	001								49
285-299		032	036	017	002								87
300-314	001	052	047	015	007								122
315-329		058	060	014	013	004							149
330-344	001	047	085	052	031	008							224
345-359	001	048	112	106	031	001	001						300
	19	1315		168		1		0		0			2983
		910		556		14		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 19/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 60 . 120 . 180 . 240 . 300 .
3	0	0	
9	0	0	
15	1	0	
21	6	0	*
27	1	0	
33	11	0	**
39	22	1	****
45	85	3	***************
51	61	2	**********
57	200	7	************************************
63	120	4	**********************
69	293	10	**
75	129	4	************************
81	160	5	******************************
87	295	10	**
93	148	5	****************************
99	270	9	**
105	123	4	**********************
111	211	7	**
117	108	4	********************
123	158	5	******************************
129	78	3	**************
135	114	4	*********************
141	42	1	*******
147	97	3	*****************
153	40	1	*******
159	27	1	*****
165	59	2	**********
171	32	1	*****
177	26	1	****
183	10	0	**
189	24	1	****
195	10	0	**
201	9	0	**
207	3	0	*
213	5	0	*
219	1	0	
225	2	0	
231	0	0	
237	1	0	

NO. OF SAMPLES OVER 240 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2983
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 19/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	213	7	**********
15	224	8	**********
25	207	7	**********
35	103	3	**********
45	80	3	**********
55	65	2	**********
65	55	2	**********
75	69	2	**********
85	82	3	**********
95	57	2	**********
105	33	1	**********
115	57	2	**********
125	68	2	**********
135	93	3	**********
145	128	4	**********
155	134	4	**********
165	80	3	**********
175	40	1	**********
185	23	1	**********
195	23	1	**********
205	25	1	**********
215	14	0	**********
225	25	1	**********
235	28	1	**********
245	22	1	**********
255	57	2	**********
265	51	2	**********
275	29	1	**********
285	39	1	**********
295	71	2	**********
305	80	3	**********
315	94	3	**********
325	99	3	**********
335	144	5	**********
345	185	6	**********
355	186	6	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

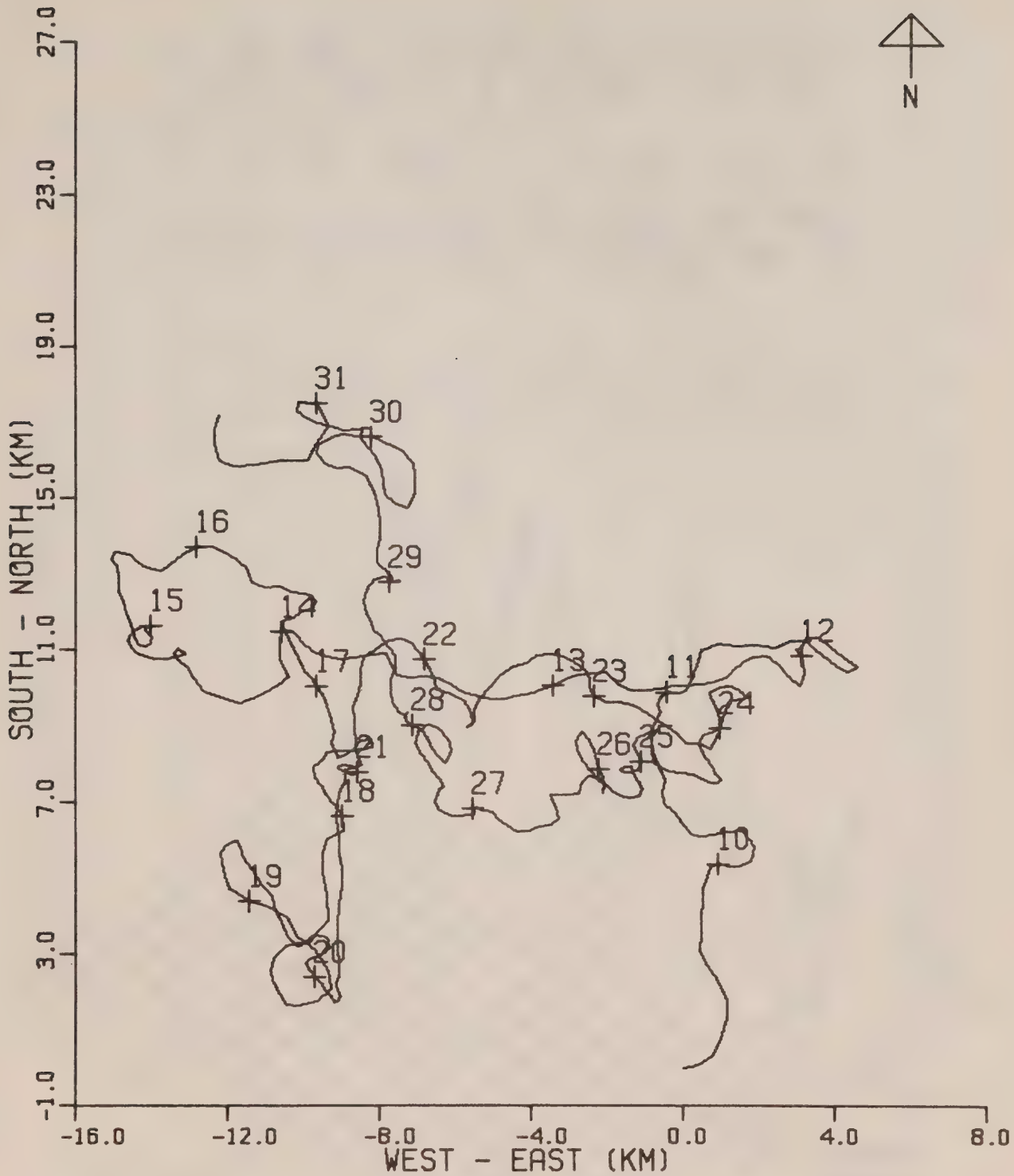
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2983
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 19/07/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 60 . 120 . 180 . 240 . 300 .
8.02	2	0	
8.06	1	0	
8.10	3	0	*
8.14	5	0	*
8.18	9	0	**
8.22	8	0	*
8.26	13	0	**
8.30	18	1	***
8.34	13	0	**
8.38	80	3	**********
8.42	82	3	**********
8.46	70	2	**********
8.50	97	3	**********
8.54	91	3	**********
8.58	232	8	**********
8.62	138	5	**********
8.66	167	6	**********
8.70	170	6	**********
8.74	214	7	**********
8.78	246	8	**********
8.82	149	5	**********
8.86	164	5	**********
8.90	163	5	**********
8.94	107	4	**********
8.98	190	6	**********
9.02	67	2	**********
9.06	56	2	**********
9.10	49	2	**********
9.14	77	3	**********
9.18	141	5	**********
9.22	65	2	**********
9.26	32	1	**********
9.30	16	1	**********
9.34	18	1	**********
9.38	23	1	**********
9.42	4	0	**********
9.46	2	0	
9.50	1	0	
9.54	0	0	
9.58	0	0	

NO. OF SAMPLES OVER 9.60 = 0
NO. OF SAMPLES UNDER 8.00 = 0
TOTAL NO. OF OBSERVATIONS = 2983
SAMPLE INTERVAL = 10 MINUTES



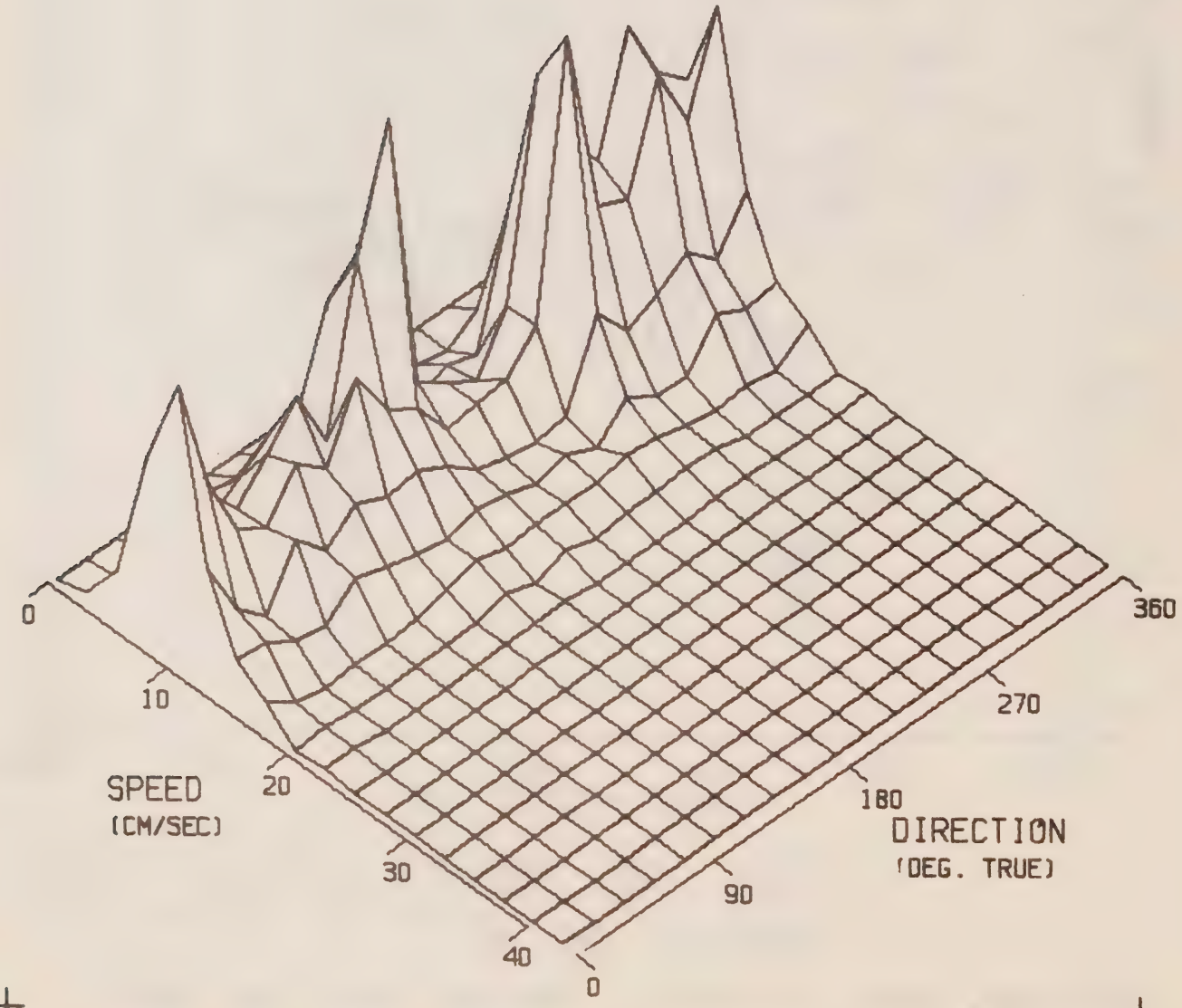
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 9/ 8/72 ENDING DATE: 31/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 9/ 8/72
NO. OF SAMPLES = 3185



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE: 9/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

DIR	SPEED 000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	002	039	099	028	007	001							176
15- 29		038	066	017		001							122
30- 44	002	021	042	012									77
45- 59	001	025	040	015									81
60- 74	005	023	040	018	001								87
75- 89	006	048	032	021	001								108
90-104	007	049	044	025	001								126
105-119	005	024	073	024	004								130
120-134	006	047	046	011	006	001	001						118
135-149	005	090	058	020	007	002							182
150-164	010	158	070	015	006	001							260
165-179	003	026	031	020	006								86
180-194	003	017	018	006	004	001							49
195-209	002	014	023	009	005								53
210-224	002	017	021	008	006								54
225-239		006	021	004	006								37
240-254	001	036	061	011	010	003							122
255-269	006	092	153	026	008								285
270-284	006	064	065	011	005	001							152
285-299	002	055	066	013	003	001							140
300-314	006	056	080	028									170
315-329	002	073	112	028	003								218
330-344		050	084	025									159
345-359	001	051	107	027	006	001							193
	83	1452		95		1		0		0			3185
	1119		422		13		0		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 09/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	80 160 240 320 400
3	0	0	
9	0	0	
15	7	0	*
21	16	1	**
27	17	1	**
33	43	1	*****
39	32	1	****
45	117	4	**********
51	88	3	**********
57	259	8	**********
63	140	4	**********
69	335	11	**********
75	148	5	**********
81	178	6	**********
87	387	12	**********
93	166	5	**********
99	324	10	**********
105	131	4	**********
111	192	6	**********
117	74	2	**********
123	117	4	**********
129	56	2	*******
135	94	3	**********
141	45	1	******
147	69	2	**********
153	21	1	***
159	20	1	***
165	25	1	***
171	14	0	**
177	25	1	***
183	8	0	*
189	13	0	**
195	7	0	*
201	5	0	*
207	2	0	
213	3	0	
219	1	0	
225	3	0	
231	1	0	
237	1	0	

NO. OF SAMPLES OVER 240 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3185
SAMPLE INTERVAL = 10 MINUTES
TOC1 RELEASED.

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M. START DATE 09/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	138	4	**********
15	85	3	**********
25	81	3	**********
35	49	2	**********
45	59	2	**********
55	50	2	**********
65	56	2	**********
75	69	2	**********
85	77	2	**********
95	82	3	**********
105	81	3	**********
115	88	3	**********
125	76	2	**********
135	82	3	**********
145	156	5	**********
155	193	6	**********
165	86	3	**********
175	53	2	**********
185	33	1	*******
195	21	1	****
205	43	1	*********
215	39	1	********
225	27	1	*****
235	27	1	*****
245	63	2	**********
255	151	5	**********
265	197	6	**********
275	109	3	**********
285	99	3	**********
295	80	3	**********
305	104	3	**********
315	149	5	**********
325	146	5	**********
335	105	3	**********
345	112	4	**********
355	119	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

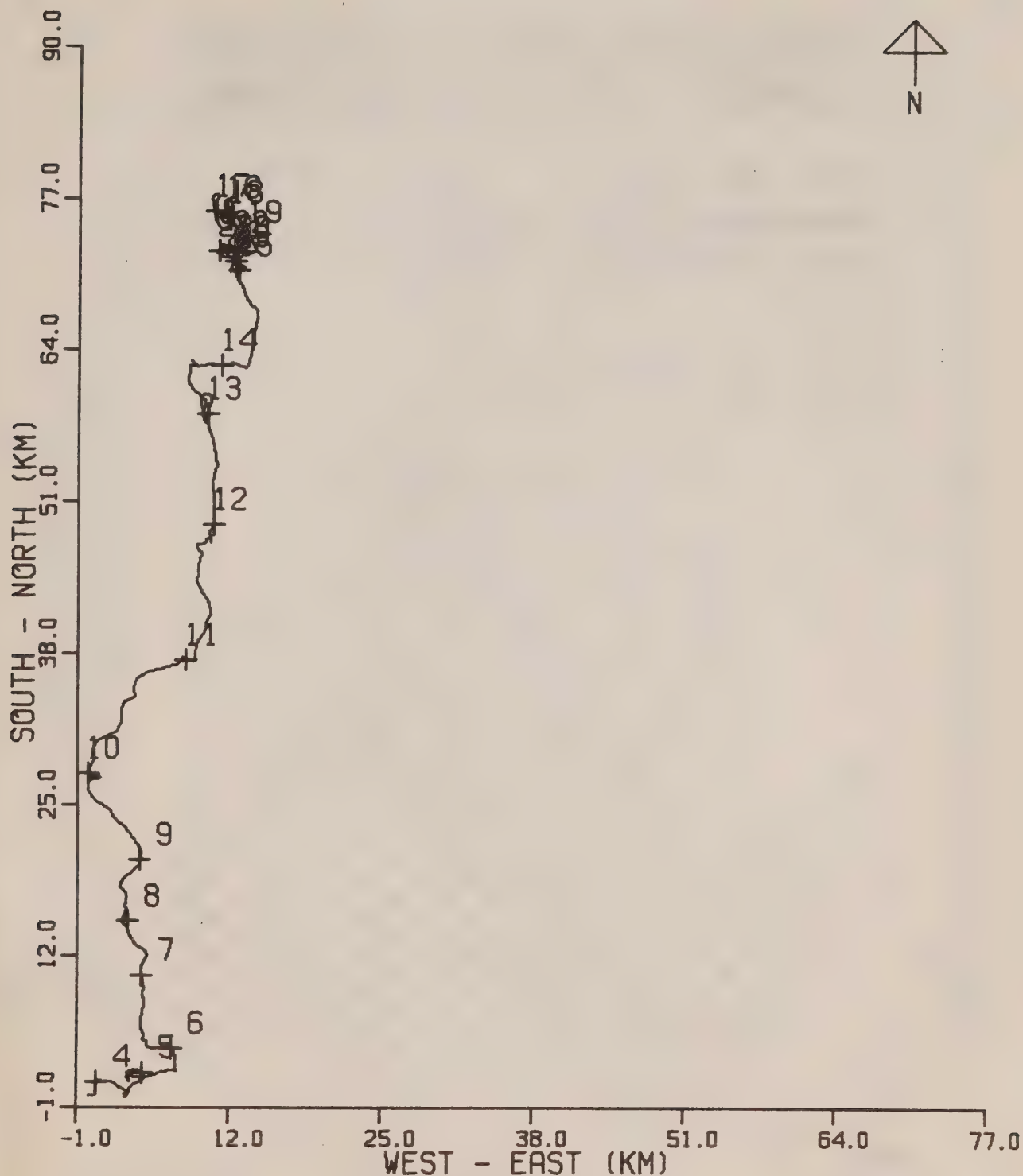
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3185
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 09/08/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	80 160 240 320 400
8.62	0	0	
8.66	0	0	
8.70	4	0	*
8.74	18	1	**
8.78	146	5	**********
8.82	105	3	**********
8.86	143	4	**********
8.90	202	6	**********
8.94	202	6	**********
8.98	253	8	**********
9.02	67	2	********
9.06	71	2	*********
9.10	152	5	**********
9.14	214	7	**********
9.18	316	10	**********
9.22	219	7	**********
9.26	218	7	**********
9.30	103	3	**********
9.34	93	3	**********
9.38	212	7	**********
9.42	76	2	**********
9.46	82	3	**********
9.50	85	3	**********
9.54	83	3	**********
9.58	89	3	**********
9.62	19	1	**
9.66	7	0	*
9.70	4	0	*
9.74	2	0	
9.78	0	0	
9.82	0	0	
9.86	0	0	
9.90	0	0	
9.94	0	0	
9.98	0	0	
10.02	0	0	
10.06	0	0	
10.10	0	0	
10.14	0	0	
10.18	0	0	

NO. OF SAMPLES OVER 10.20 = 0
NO. OF SAMPLES UNDER 8.60 = 0
TOTAL NO. OF OBSERVATIONS = 3185
SAMPLE INTERVAL = 10 MINUTES



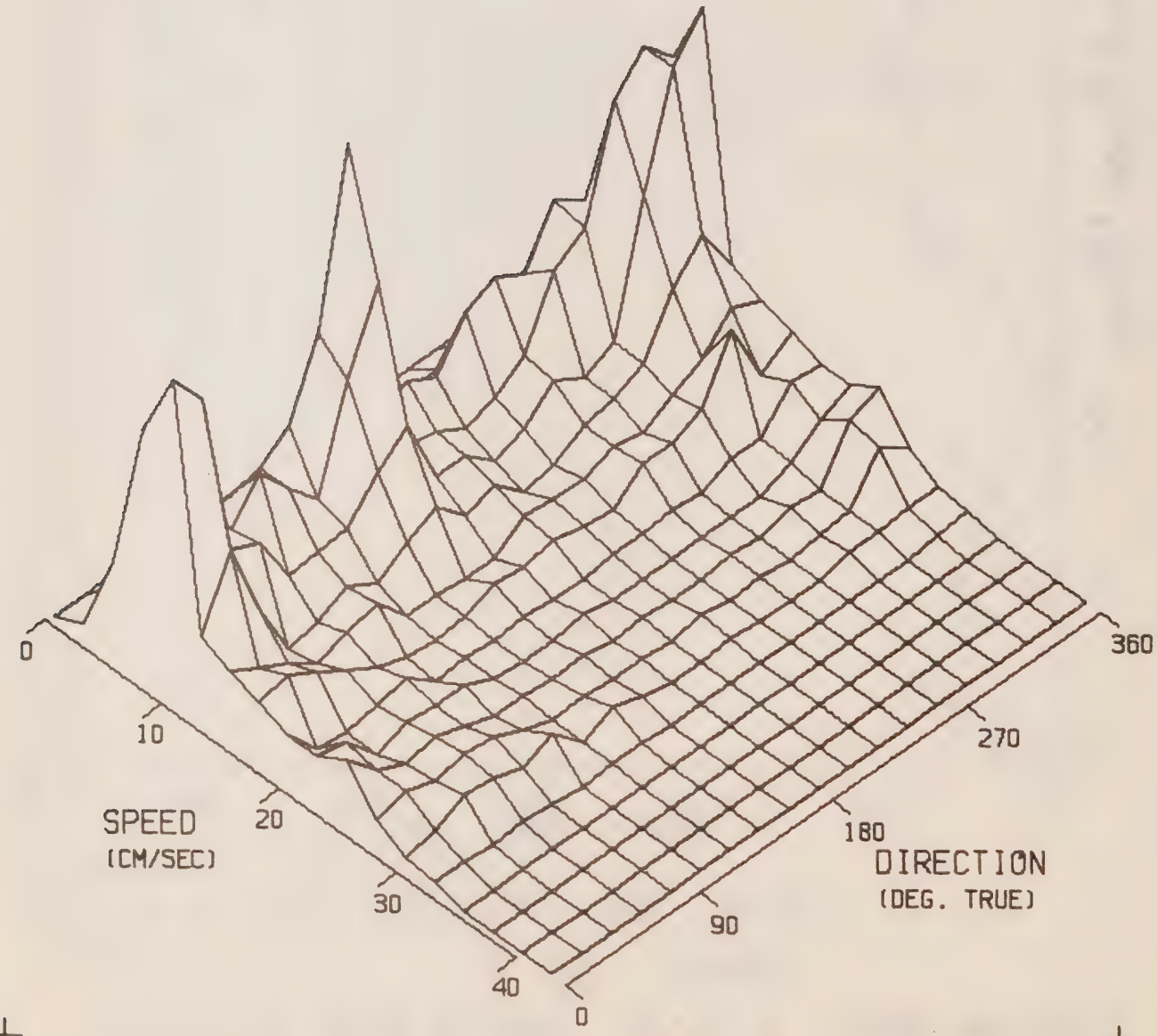
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 3/10/72 ENDING DATE: 23/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 3/10/72
NO. OF SAMPLES = 2829



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE: 3/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	005	042	089	021	022	019	016	003	001				218
15- 29	006	071	088	034	017	010	015	004	001				246
30- 44	006	037	050	020	011	005	008	010					147
45- 59	010	031	044	006	007	004	005	007	001				115
60- 74	007	037	019	004	010	008	014	009	001				109
75- 89	004	032	022	009	005	007	005	009					93
90-104	005	031	020	012		004	005	009					86
105-119	002	023	017	008	001	001	001	003					56
120-134		044	016	002		002	001	003	001				69
135-149	004	064	031	005	001		002	005					112
150-164	011	098	054	007	003		002	002					177
165-179	011	063	020	002	003	002	001						102
180-194	003	017	011	003	004		002						40
195-209	005	023	015	011	003								57
210-224	003	018	003	004	002	001	001	001					33
225-239	002	016	009	001	003			001					32
240-254	009	030	010	007	001		001						58
255-269	002	030	021	013	009	001	001						77
270-284	011	038	013	009	008								79
285-299	007	045	021	008	012	001	001						95
300-314	013	064	021	021	016	001	002	003					141
315-329	011	066	058	024	023	004	003	003					192
330-344	004	066	102	036	013	014	014	007					256
345-359	002	050	108	026	011	011	024	006	001				239
	143		862		185		124		6		0		2829
		1036		293		95		85		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 03/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 60 . 120 . 180 . 240 . 300 .
4	0	0	
12	8	0	*
20	37	1	******
28	60	2	**********
36	100	4	**********
44	167	6	**********
52	223	8	**********
60	259	9	**********
68	220	8	**********
76	105	4	**********
84	234	8	**********
92	205	7	**********
100	185	7	**********
108	131	5	**********
116	107	4	**********
124	76	3	**********
132	66	2	**********
140	44	2	*******
148	56	2	*********
156	51	2	*********
164	57	2	**********
172	39	1	*******
180	42	1	*******
188	31	1	*****
196	16	1	***
204	18	1	***
212	21	1	****
220	25	1	****
228	23	1	****
236	24	1	****
244	7	0	*
252	29	1	*****
260	26	1	****
268	29	1	*****
276	17	1	***
284	25	1	****
292	18	1	***
300	23	1	****
308	14	0	**
316	5	0	*

NO. OF SAMPLES OVER 320 = 6
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2829
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 03/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	167	6	**********
15	144	5	*********
25	170	6	**********
35	101	4	******
45	86	3	*****
55	69	2	****
65	73	3	*****
75	67	2	****
85	56	2	***
95	54	2	***
105	55	2	***
115	34	1	**
125	40	1	**
135	51	2	***
145	94	3	******
155	105	4	*******
165	130	5	*********
175	41	1	**
185	18	1	*
195	42	1	**
205	31	1	**
215	22	1	*
225	22	1	*
235	20	1	*
245	42	1	**
255	48	2	***
265	51	2	***
275	53	2	***
285	55	2	***
295	68	2	****
305	93	3	******
315	114	4	*******
325	142	5	*********
335	165	6	**********
345	161	6	**********
355	145	5	*********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

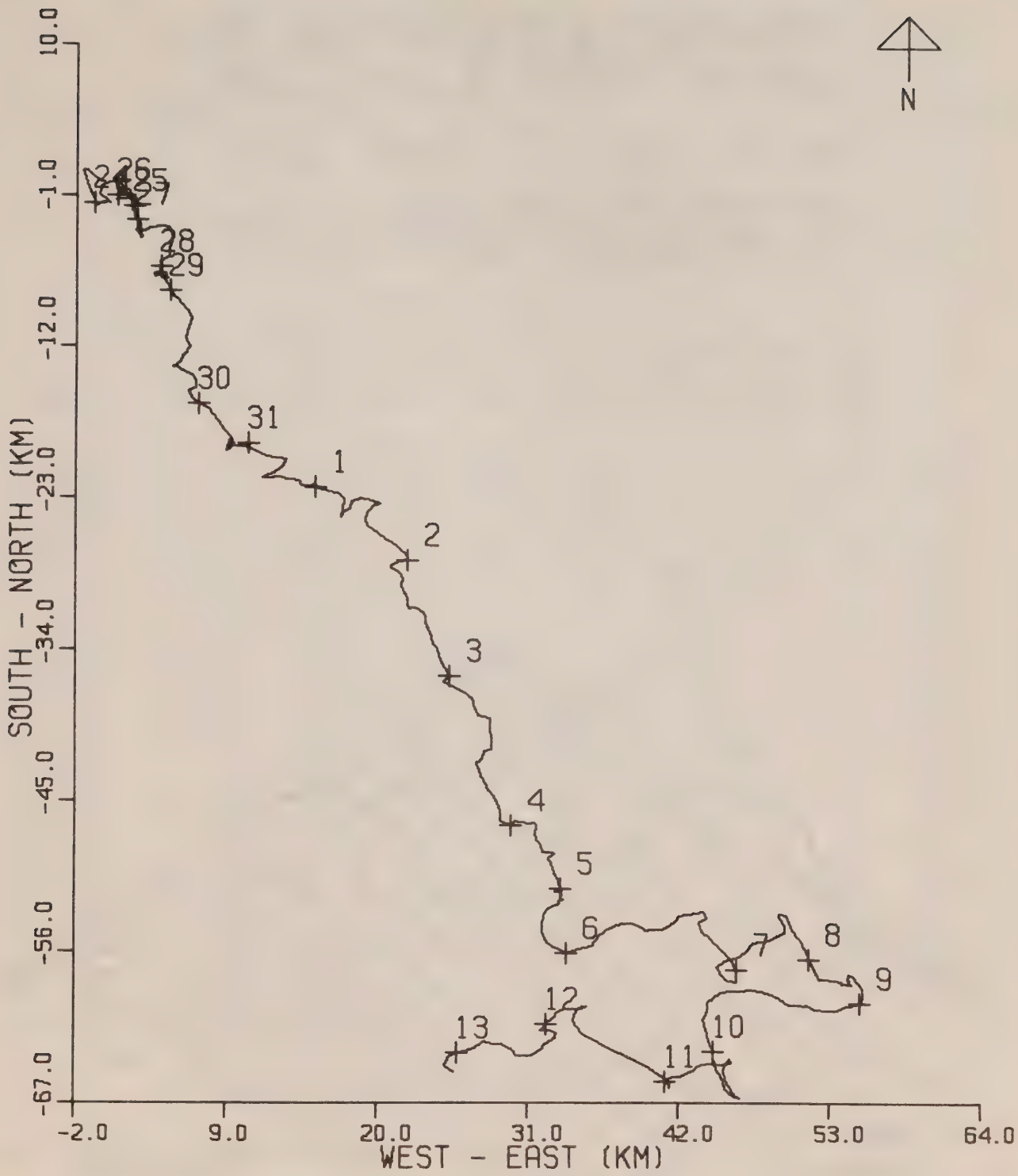
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2829
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 03/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	140 280 420 560 700
8.41	0	0	
8.43	0	0	
8.45	0	0	
8.47	0	0	
8.49	0	0	
8.51	0	0	
8.53	2	0	
8.55	0	0	
8.57	7	0	*
8.59	29	1	**
8.61	0	0	
8.63	23	1	**
8.65	51	2	****
8.67	0	0	
8.69	131	5	*********
8.71	0	0	
8.73	158	6	**********
8.75	307	11	**********
8.77	0	0	
8.79	614	22	**********
8.81	0	0	
8.83	545	19	**********
8.85	402	14	**********
8.87	0	0	
8.89	105	4	********
8.91	159	6	**********
8.93	0	0	
8.95	152	5	**********
8.97	0	0	
8.99	72	3	*****
9.01	63	2	*****
9.03	0	0	
9.05	9	0	*
9.07	0	0	
9.09	0	0	
9.11	0	0	
9.13	0	0	
9.15	0	0	
9.17	0	0	
9.19	0	0	

NO. OF SAMPLES OVER 9.20 = 0
NO. OF SAMPLES UNDER 8.40 = 0
TOTAL NO. OF OBSERVATIONS = 2829
SAMPLE INTERVAL = 10 MINUTES



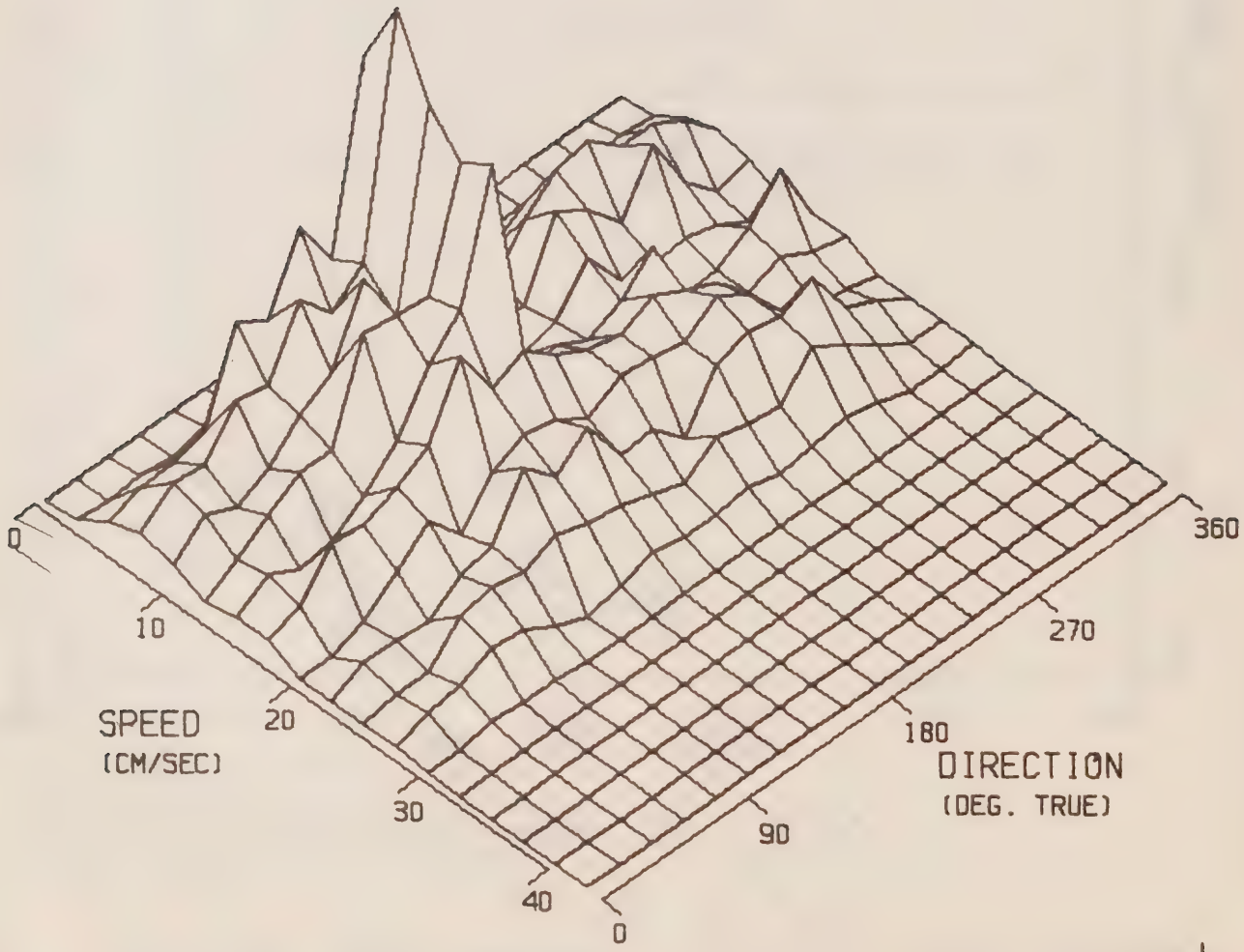
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 23/10/72 ENDING DATE: 13/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 23/10/72
NO. OF SAMPLES = 3000



STN. NO. HS-3 DEPTH 30 M.

STARTING DATE:23/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO	
DIR	039	079	119	159	199	239	279	319	359	399	439	479	
0- 14		011	005	007	003	002	001						29
15- 29		015	014	013	006	004	006	001					59
30- 44	001	017	015	014	013	005	004	002					71
45- 59		014	015	016	020	005	011	003					84
60- 74	001	026	026	016	019	006	013	004					111
75- 89	001	039	025	015	028	010	014	001					133
90-104	002	038	043	031	023	009	011	001					158
105-119		048	053	037	030	020	010						198
120-134	003	044	050	059	046	027	011						240
135-149	003	047	050	050	030	020	011						211
150-164	006	110	110	086	041	025	008	001					387
165-179	004	058	045	048	029	019	012						215
180-194	001	021	010	010	020	012	009						83
195-209		010	016	020	029	015	004	001					95
210-224	002	006	014	016	024	014	006						82
225-239		010	019	011	018	019	015						92
240-254		017	041	032	027	015	009						141
255-269	002	027	023	021	026	022	007						128
270-284		025	023	014	022	025	017	001					127
285-299		014	033	010	010	025	007						99
300-314		014	023	007	012	014	013						83
315-329		015	019	016	004	011	004						69
330-344	001	016	010	019	009	007	002						64
345-359	002	016	008	006	007	001	001						41
	29	690		496		206		0		0			3000
		658	574		332		15		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 23/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
4	0	0	
12	1	0	
20	3	0	*
28	9	0	**
36	47	2	*********
44	104	3	**********************
52	130	4	****************************
60	162	5	**********************************
68	158	5	**********************************
76	73	2	****************
84	158	5	**********************************
92	175	6	**************************************
100	123	4	**************************
108	98	3	*********************
116	136	5	*****************************
124	110	4	************************
132	115	4	*************************
140	122	4	**************************
148	115	4	*************************
156	112	4	************************
164	92	3	********************
172	97	3	*********************
180	111	4	************************
188	110	4	************************
196	86	3	******************
204	57	2	************
212	77	3	****************
220	86	3	******************
228	79	3	*****************
236	71	2	***************
244	30	1	******
252	53	2	************
260	36	1	*******
268	33	1	*******
276	16	1	***
284	11	0	**
292	2	0	
300	2	0	
308	0	0	
316	0	0	

NO. OF SAMPLES OVER 320 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 23/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 50 100 150 200 250
5	16	1	***
15	31	1	******
25	47	2	*********
35	45	2	*********
45	48	2	**********
55	63	2	************
65	68	2	**************
75	89	3	*******************
85	96	3	********************
95	95	3	********************
105	128	4	*****************************
115	133	4	******************************
125	173	6	**************************************
135	130	4	*****************************
145	141	5	*******************************
155	278	9	**
165	221	7	**
175	96	3	********************
185	60	2	************
195	65	2	**************
205	54	2	************
215	53	2	************
225	60	2	************
235	71	2	***************
245	95	3	********************
255	84	3	******************
265	93	3	********************
275	86	3	******************
285	60	2	************
295	71	2	***************
305	59	2	************
315	47	2	*********
325	45	2	*********
335	45	2	*********
345	30	1	******
355	24	1	*****
365	0	0	
375	0	0	
385	0	0	
395	0	0	

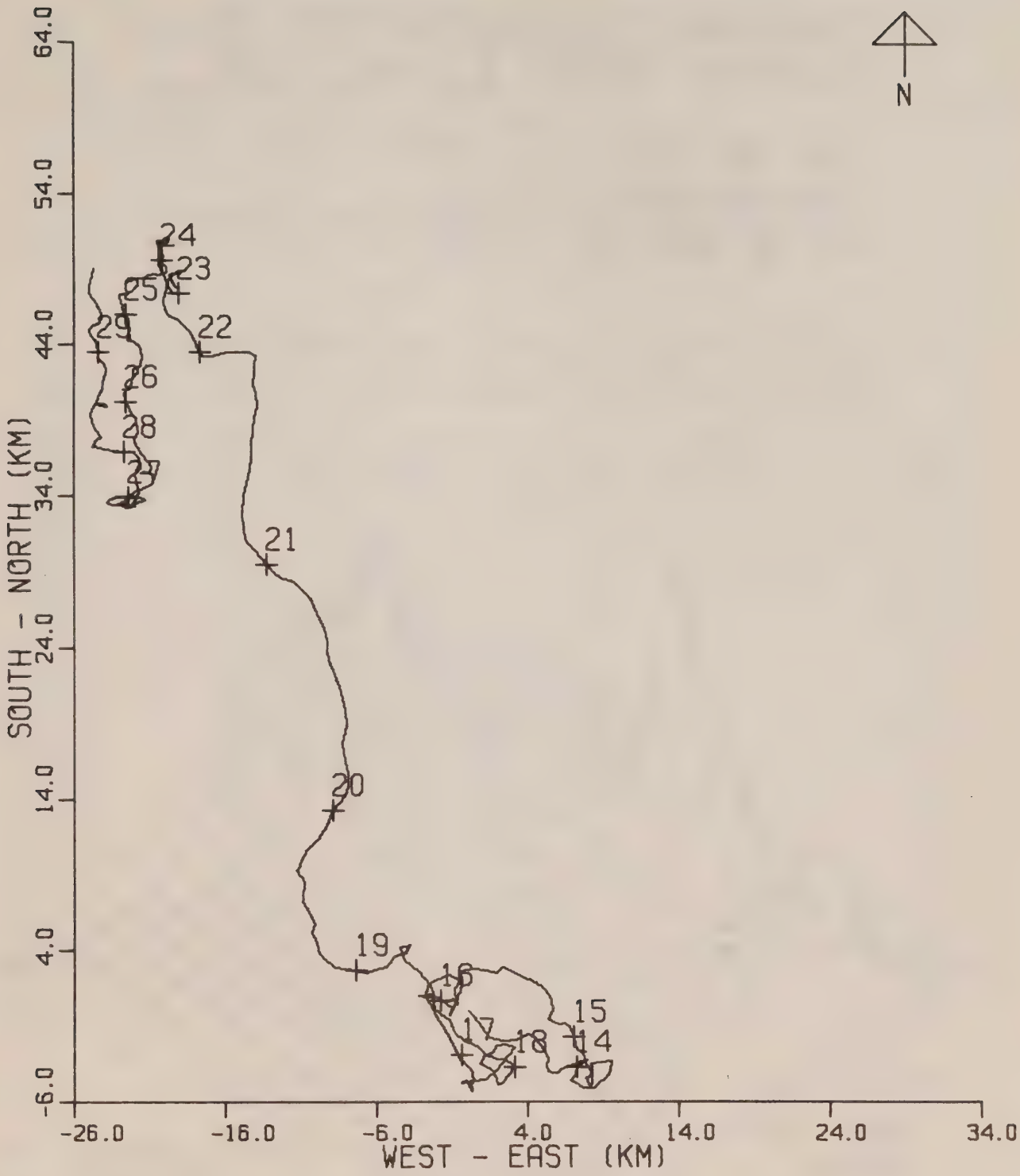
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 23/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 140 . 280 . 420 . 560 . 700 .
8.41	0	0	
8.43	0	0	
8.45	0	0	
8.47	4	0	
8.49	35	1	***
8.51	0	0	
8.53	41	1	***
8.55	0	0	
8.57	69	2	*****
8.59	76	3	*****
8.61	0	0	
8.63	72	2	*****
8.65	268	9	**********
8.67	0	0	
8.69	228	8	**********
8.71	0	0	
8.73	301	10	**********
8.75	278	9	**********
8.77	0	0	
8.79	420	14	**********
8.81	0	0	
8.83	442	15	**********
8.85	322	11	**********
8.87	0	0	
8.89	157	5	**********
8.91	146	5	**********
8.93	0	0	
8.95	64	2	*****
8.97	0	0	
8.99	46	2	***
9.01	16	1	*
9.03	0	0	
9.05	4	0	
9.07	0	0	
9.09	4	0	
9.11	0	0	
9.13	0	0	
9.15	7	0	*
9.17	0	0	
9.19	0	0	

NO. OF SAMPLES OVER 9.20 = 0
NO. OF SAMPLES UNDER 8.40 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES



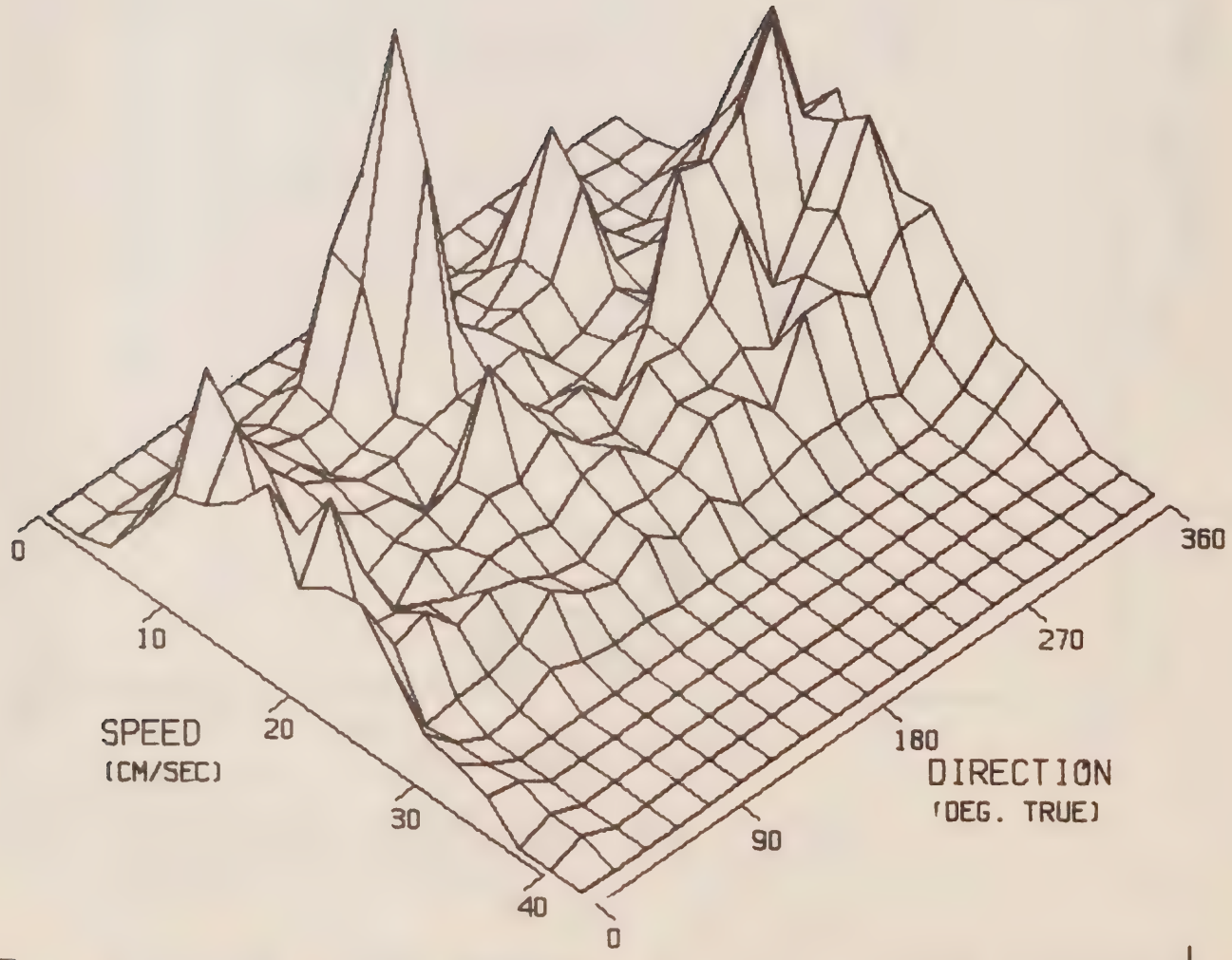
STN. NO. HS-3

DEPTH 30 M.

STARTING DATE: 13/11/72 ENDING DATE: 29/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 30 M.
STARTING DATE: 13/11/72
NO. OF SAMPLES = 2379



STN, NO, HS-3 DEPTH 30 M,

STARTING DATE:13/11/72
SAMPLE INTERVAL = 10 MIN,

FREQUENCY DISTRIBUTION OF DIRECTION (DEG, TRUE)
AND SPEED (MM/SEC),

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14		009	018	032	039	019	024	007	011	002			161
15- 29		010	038	026	027	015	011	002	003	002			134
30- 44		008	035	011	014	012	015						95
45- 59		008	027	020	010	011	008	001					85
60- 74		005	009	012	007	005	006	002					46
75- 89		009	011	011	006	011	011	006					65
90-104		004	006	011	006	011	008	005					51
105-119		007	006	003	009	008	011	004					48
120-134	002	017	006	004	021	004	005						59
135-149		032	013	010	025	008	006	002					96
150-164	001	065	060	012	018	013	009	002					180
165-179		033	037	011	016	013	010	002					122
180-194		018	016	006	009	012	010						71
195-209		001	010	007	011	006	007	001					43
210-224		006	012	005	012	012	012						59
225-239		003	005	006	010	014	009						47
240-254		014	023	012	024	016	013						102
255-269		024	025	010	034	014	008						115
270-284	001	021	011	007	040	018	018						116
285-299		003	004	009	024	015	019						74
300-314	002	001	003	028	049	018	018						119
315-329	001	001	011	035	056	030	014						148
330-344		003	021	055	037	045	021						182
345-359		003	025	040	021	033	021	012	006				161
	7	432		525		294		20		0			2379
	305		383		363		46		4		0		

NO, OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 30M, START DATE 13/11/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
5	0	0	
15	2	0	*
25	1	0	
35	11	0	***
45	35	1	*********
55	103	4	*****************************
65	78	3	**********************
75	82	3	**********************
85	156	7	**
95	81	3	**********************
105	114	5	********************************
115	81	3	**********************
125	120	5	**********************************
135	71	3	********************
145	106	4	******************************
155	86	4	************************
165	99	4	****************************
175	156	7	**
185	117	5	**********************************
195	153	6	***
205	78	3	**********************
215	117	5	**********************************
225	82	3	**********************
235	140	6	**
245	72	3	********************
255	69	3	*******************
265	67	3	*******************
275	32	1	********
285	24	1	******
295	10	0	***
305	9	0	**
315	3	0	*
325	8	0	**
335	3	0	*
345	5	0	*
355	4	0	*
365	0	0	
375	2	0	*
385	1	0	
395	1	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2379
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 30M, START DATE 13/11/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	116	5	**********
15	99	4	*********
25	89	4	********
35	54	2	*****
45	75	3	*******
55	45	2	****
65	30	1	***
75	43	2	****
85	37	2	***
95	39	2	****
105	29	1	***
115	33	1	***
125	33	1	***
135	43	2	****
145	83	3	********
155	127	5	**********
165	98	4	*********
175	79	3	*******
185	41	2	****
195	37	2	***
205	29	1	***
215	42	2	****
225	32	1	***
235	32	1	***
245	59	2	******
255	99	4	*********
265	67	3	*******
275	83	3	********
285	55	2	*****
295	47	2	****
305	88	4	********
315	79	3	*******
325	107	4	**********
335	117	5	**********
345	122	5	**********
355	91	4	*********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2379
SAMPLE INTERVAL = 10 MINUTES

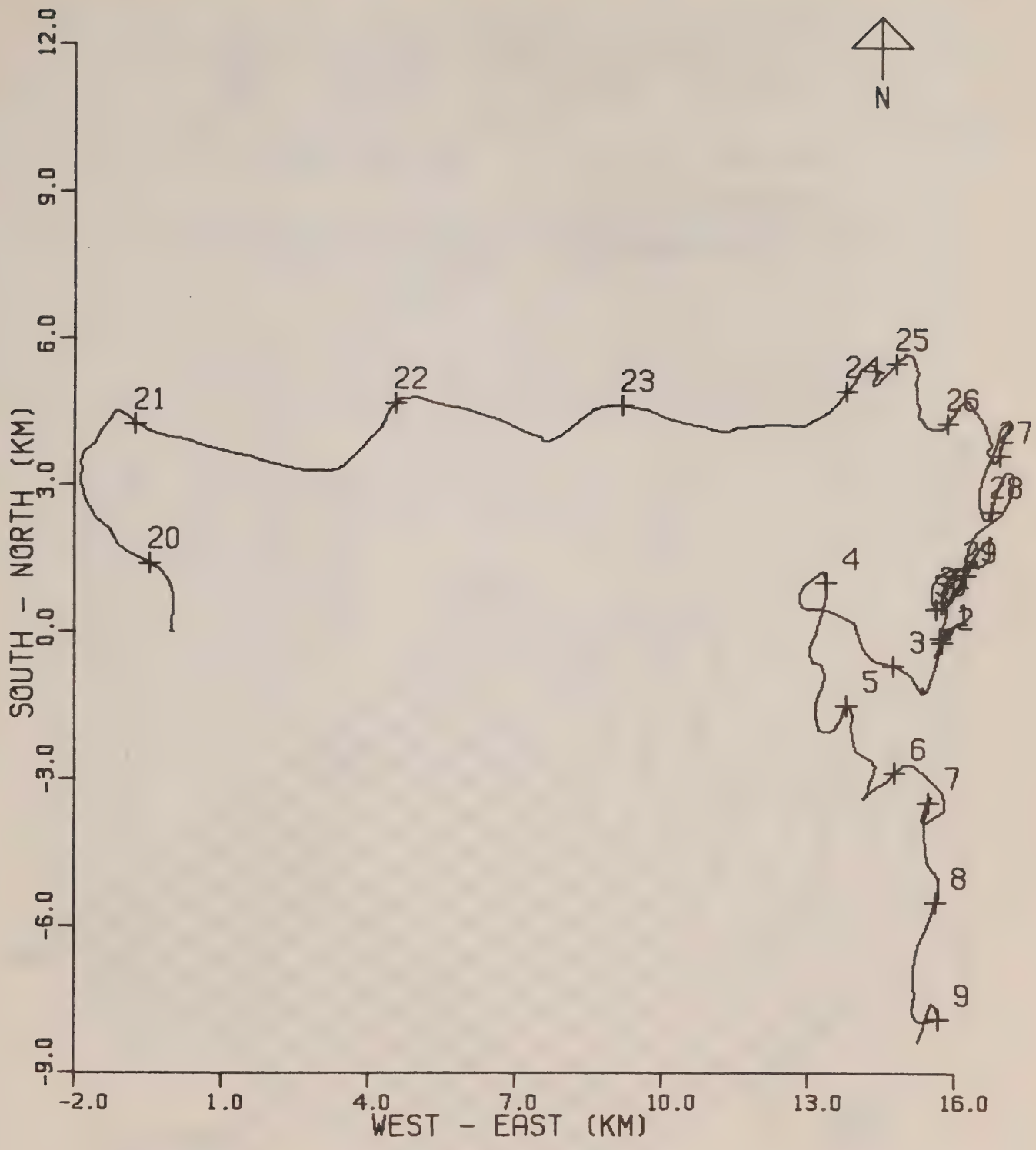
HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 30M, START DATE 13/11/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 80 . 160 . 240 . 320 . 400
8.41	7	0	*
8.43	14	1	**
8.45	0	0	
8.47	21	1	***
8.49	45	2	******
8.51	0	0	
8.53	54	2	*******
8.55	0	0	
8.57	63	3	********
8.59	47	2	******
8.61	0	0	
8.63	54	2	*******
8.65	136	6	******************
8.67	0	0	
8.69	306	13	**********
8.71	0	0	
8.73	143	6	*******************
8.75	112	5	***************
8.77	0	0	
8.79	262	11	**********
8.81	0	0	
8.83	210	9	*****************************
8.85	101	4	**************
8.87	0	0	
8.89	67	3	********
8.91	75	3	**********
8.93	0	0	
8.95	115	5	***************
8.97	0	0	
8.99	82	3	**********
9.01	90	4	************
9.03	0	0	
9.05	245	10	**********
9.07	0	0	
9.09	104	4	**************
9.11	20	1	***
9.13	0	0	
9.15	0	0	
9.17	0	0	
9.19	0	0	

NO. OF SAMPLES OVER 9.20 = 0
NO. OF SAMPLES UNDER 8.40 = 6
TOTAL NO. OF OBSERVATIONS = 2379
SAMPLE INTERVAL = 10 MINUTES

DATA FOR 235-METRE DEPTH



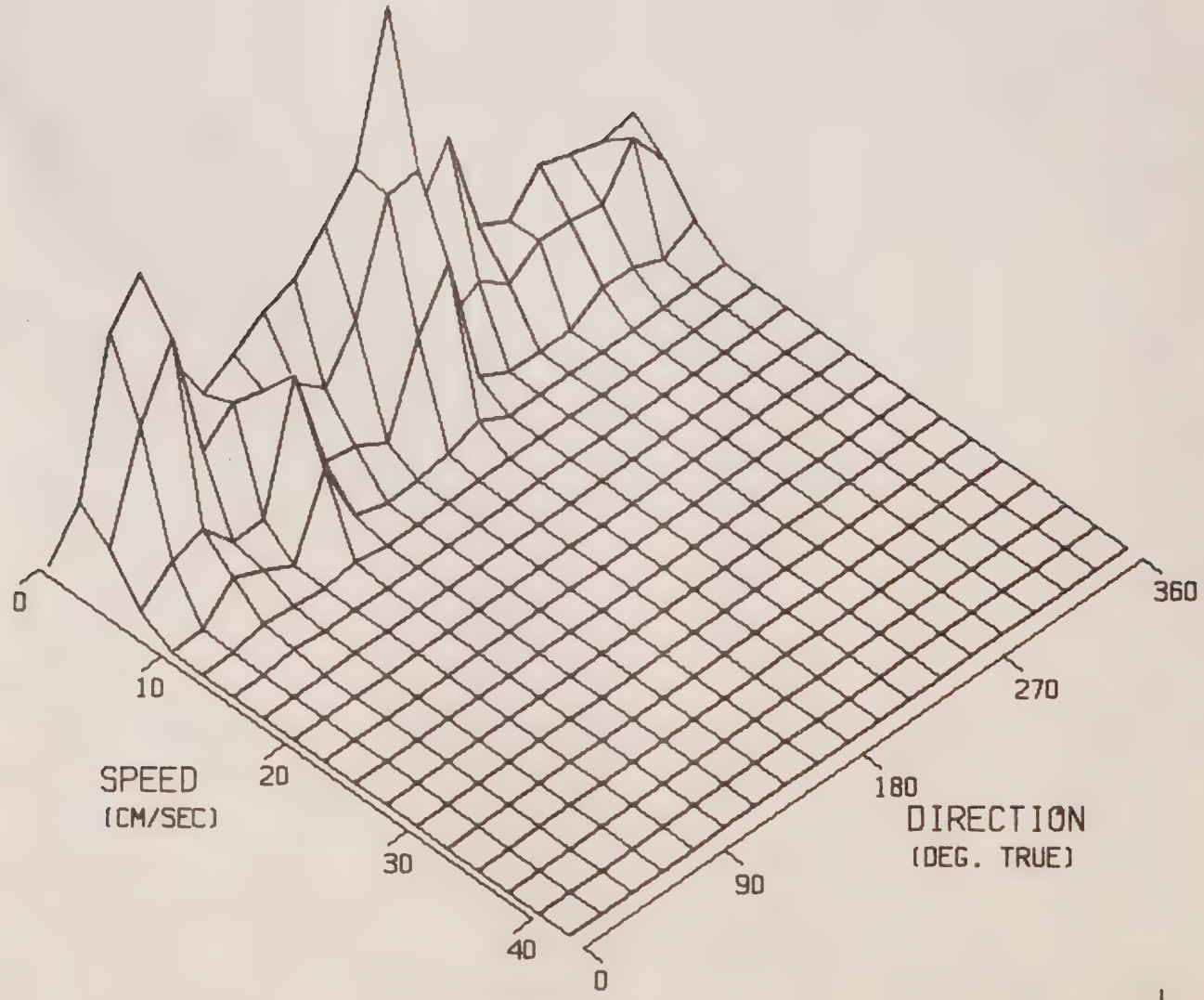
STN. NO. HS-3

DEPTH 235 M.

STARTING DATE: 19/ 7/72 ENDING DATE: 9/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 235 M.
STARTING DATE: 19/ 7/72
NO. OF SAMPLES = 2985



STN. NO. HS-3 DEPTH 235 M.

STARTING DATE:19/ 7/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	049	046											95
15- 29	100	083	002										185
30- 44	113	134	019	005									271
45- 59	082	059	018										159
60- 74	047	026	004										77
75- 89	044	063	004										111
90-104	054	086	027										167
105-119	044	082	031										157
120-134	066	045											111
135-149	065	042	001										108
150-164	068	055											123
165-179	065	059	007										131
180-194	142	163	012										317
195-209	127	119	028										274
210-224	059	029											88
225-239	070	045	001										116
240-254	062	005											67
255-269	033	022											55
270-284	022	019											41
285-299	037	032											69
300-314	031	040											71
315-329	039	028											67
330-344	033	047											80
345-359	022	023											45
	1474		154		0		0		0		0		2985
		1352		5		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 235M START DATE 19/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70 . 140 . 210 . 280 . 350 .
2	0	0	
6	0	0	
10	0	0	
14	566	19	**********
18	227	8	**********
22	185	6	**********
26	183	6	**********
30	160	5	**********
34	153	5	**********
38	169	6	**********
42	191	6	**********
46	173	6	**********
50	173	6	**********
54	196	7	**********
58	128	4	**********
62	126	4	**********
66	81	3	**********
70	70	2	**********
74	45	2	******
78	0	0	
82	40	1	******
86	24	1	***
90	26	1	****
94	19	1	***
98	9	0	*
102	11	0	**
106	12	0	**
110	7	0	*
114	6	0	*
118	0	0	
122	1	0	
126	2	0	
130	0	0	
134	0	0	
138	0	0	
142	1	0	
146	1	0	
150	0	0	
154	0	0	
158	0	0	

NO. OF SAMPLES OVER 160 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2985
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 235M START DATE 19/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	66	2	**********
15	79	3	**********
25	155	5	**********
35	175	6	**********
45	141	5	**********
55	99	3	**********
65	59	2	**********
75	36	1	*******
85	99	3	**********
95	90	3	**********
105	155	5	**********
115	73	2	**********
125	80	3	**********
135	70	2	**********
145	68	2	**********
155	91	3	**********
165	78	3	**********
175	95	3	**********
185	194	6	**********
195	264	9	**********
205	133	4	**********
215	54	2	**********
225	54	2	**********
235	83	3	**********
245	54	2	**********
255	34	1	*******
265	33	1	*******
275	32	1	******
285	37	1	*******
295	48	2	**********
305	49	2	**********
315	34	1	*******
325	53	2	**********
335	59	2	**********
345	39	1	********
355	22	1	****
365	0	0	
375	0	0	
385	0	0	
395	0	0	

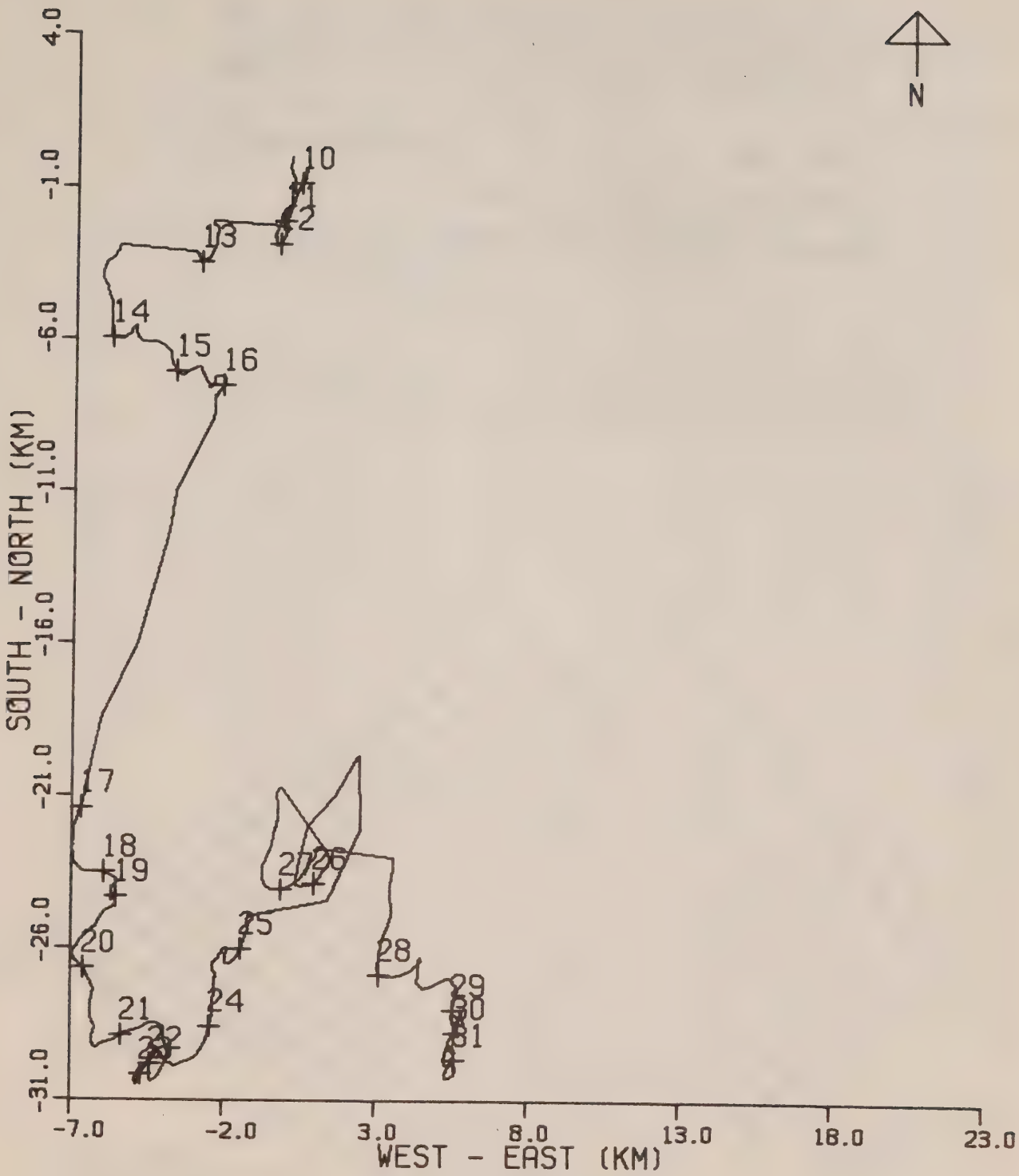
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2985
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 235M START DATE 19/07/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	190 380 570 760 950
6.61	0	0	
6.63	0	0	
6.65	0	0	
6.67	0	0	
6.69	0	0	
6.71	0	0	
6.73	0	0	
6.75	0	0	
6.77	0	0	
6.79	0	0	
6.81	6	0	
6.83	123	4	******
6.85	15	1	*
6.87	4	0	
6.89	1	0	
6.91	3	0	
6.93	37	1	**
6.95	0	0	
6.97	57	2	***
6.99	1450	49	**********
7.01	632	21	**********
7.03	109	4	******
7.05	225	8	**********
7.07	207	7	**********
7.09	85	3	****
7.11	0	0	
7.13	30	1	**
7.15	1	0	
7.17	0	0	
7.19	0	0	
7.21	0	0	
7.23	0	0	
7.25	0	0	
7.27	0	0	
7.29	0	0	
7.31	0	0	
7.33	0	0	
7.35	0	0	
7.37	0	0	
7.39	0	0	

NO. OF SAMPLES OVER 7.40 = 0
NO. OF SAMPLES UNDER 6.60 = 0
TOTAL NO. OF OBSERVATIONS = 2985
SAMPLE INTERVAL = 10 MINUTES
C4 RELEASED.



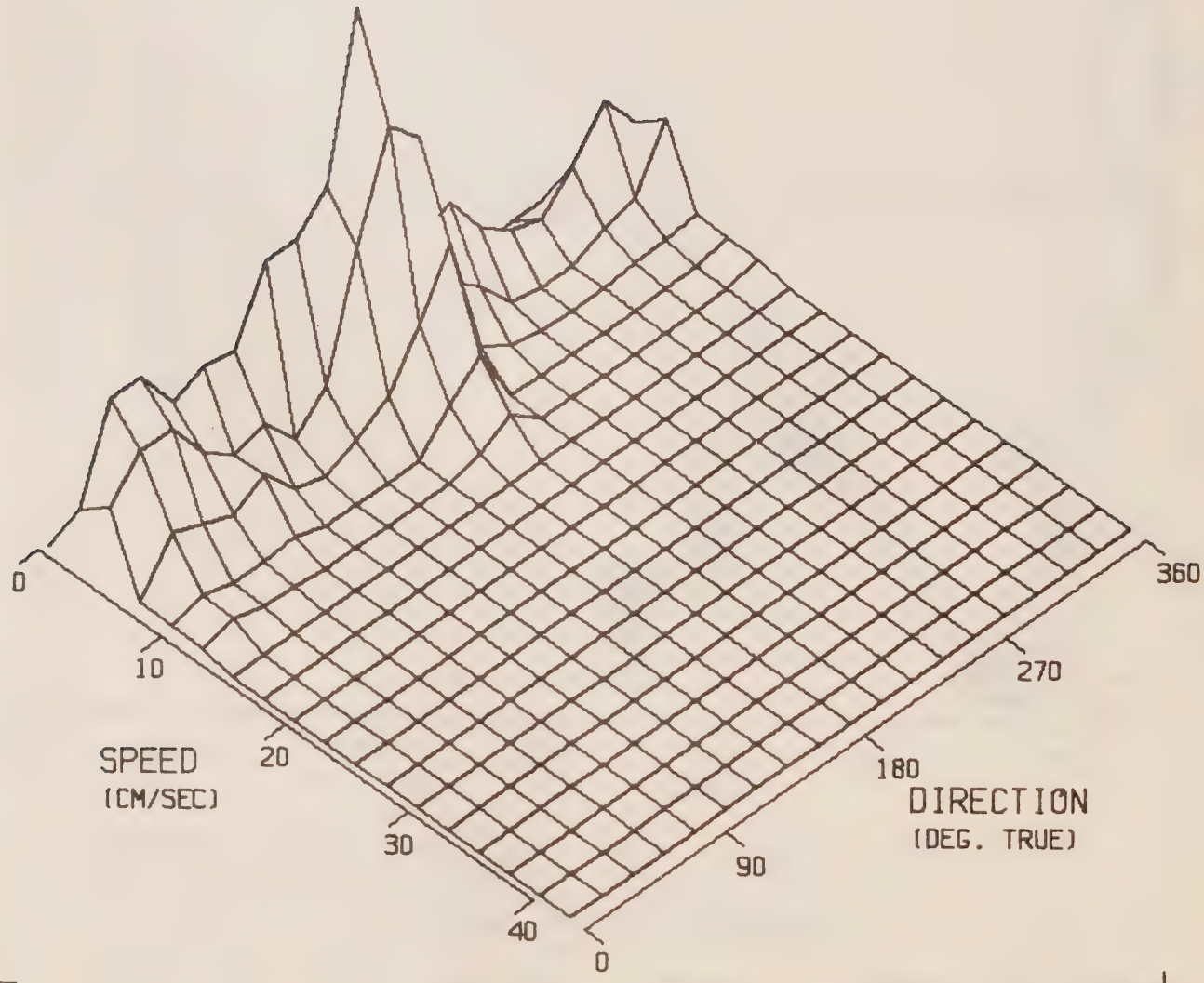
STN. NO. HS-3

DEPTH 235 M.

STARTING DATE: 9/ 8/72 ENDING DATE: 31/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 235 M.
STARTING DATE: 9/ 8/72
NO. OF SAMPLES = 3181



STN. NO. HS-3 DEPTH 235 M.

STARTING DATE: 9/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO
DIR	039	079	119	159	199	239	279	319	359	399	439	479
0- 14	041	051	008	009								109
15- 29	074	096	015	003								188
30- 44	088	096	010	003								197
45- 59	060	053	003	001								117
60- 74	044	058	012	002								116
75- 89	070	039	010									119
90-104	051	043										94
105-119	074	018										92
120-134	094	013	003									110
135-149	099	045										144
150-164	108	109										217
165-179	138	123	017									278
180-194	204	212	049	004								469
195-209	106	188	054	006								354
210-224	044	048	002									94
225-239	065	048										113
240-254	052	015										67
255-269	024	005										29
270-284	020	001										21
285-299	012											12
300-314	017											17
315-329	029	014										43
330-344	057	014										71
345-359	040	041	003									84
	1611		186		0		0		0		0	3155
		1330		28		0		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 26

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 235M START DATE 09/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70 140 210 280 350
2	0	0	
6	0	0	
10	0	0	
14	573	18	**********
18	210	7	**********
22	191	6	**********
26	206	6	**********
30	203	6	**********
34	228	7	**********
38	227	7	**********
42	174	5	**********
46	163	5	**********
50	154	5	**********
54	131	4	**********
58	141	4	**********
62	119	4	**********
66	111	3	**********
70	68	2	**********
74	42	1	*******
78	0	0	
82	40	1	*******
86	21	1	***
90	22	1	***
94	15	0	**
98	17	1	**
102	21	1	***
106	13	0	**
110	17	1	**
114	12	0	**
118	8	0	*
122	11	0	**
126	12	0	**
130	3	0	
134	1	0	
138	0	0	
142	1	0	
146	0	0	
150	0	0	
154	0	0	
158	0	0	

NO. OF SAMPLES OVER 160 = 26
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3181
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 235M START DATE 09/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	70	140	210	280	350
5	58	2	********				
15	134	4	**********				
25	119	4	**********				
35	144	5	**********				
45	83	3	**********				
55	82	3	**********				
65	71	2	**********				
75	97	3	**********				
85	66	2	**********				
95	78	2	**********				
105	52	2	*******				
115	63	2	**********				
125	80	3	**********				
135	64	2	**********				
145	111	3	**********				
155	162	5	**********				
165	133	4	**********				
175	223	7	**********				
185	316	10	**********				
195	327	10	**********				
205	166	5	**********				
215	61	2	**********				
225	77	2	**********				
235	70	2	**********				
245	41	1	******				
255	34	1	*****				
265	17	1	**				
275	14	0	**				
285	13	0	**				
295	8	0	*				
305	11	0	**				
315	20	1	***				
325	36	1	*****				
335	39	1	******				
345	54	2	********				
355	57	2	********				
365	0	0					
375	0	0					
385	0	0					
395	0	0					

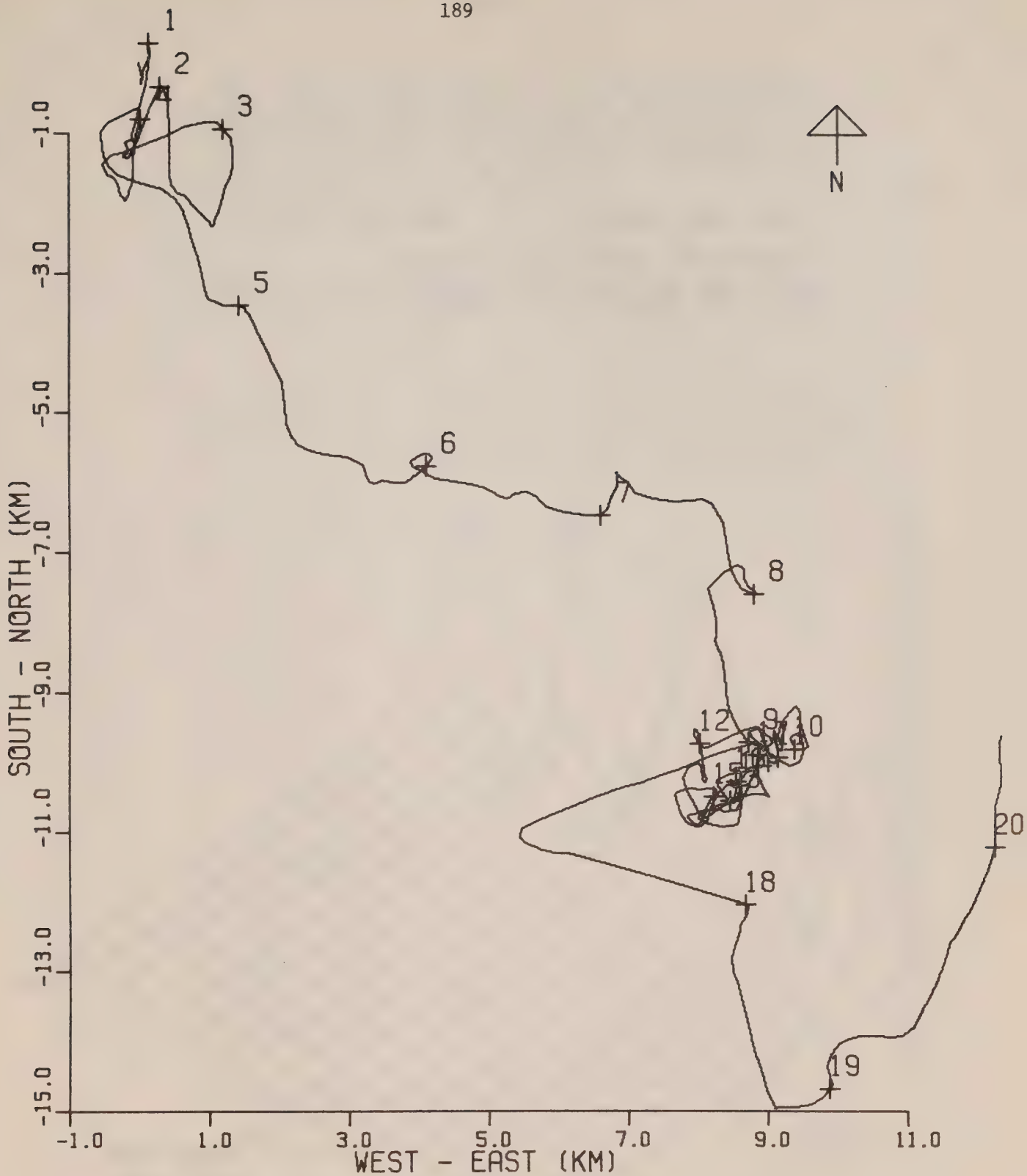
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3181
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 235M START DATE 09/08/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	160 320 480 640 800
6.91	0	0	
6.93	0	0	
6.95	0	0	
6.97	0	0	
6.99	14	0	*
7.01	43	1	***
7.03	187	6	**********
7.05	966	30	**********
7.07	674	21	**********
7.09	95	3	******
7.11	0	0	
7.13	94	3	******
7.15	5	0	
7.17	8	0	*
7.19	3	0	
7.21	4	0	
7.23	5	0	
7.25	5	0	
7.27	0	0	
7.29	5	0	
7.31	3	0	
7.33	2	0	
7.35	17	1	*
7.37	5	0	
7.39	24	1	**
7.41	125	4	********
7.43	285	9	**********
7.45	0	0	
7.47	274	9	**********
7.49	167	5	**********
7.51	99	3	******
7.53	23	1	*
7.55	13	0	*
7.57	4	0	
7.59	13	0	*
7.61	0	0	
7.63	14	0	*
7.65	1	0	
7.67	3	0	
7.69	0	0	

NO. OF SAMPLES OVER 7.70 = 1
NO. OF SAMPLES UNDER 6.90 = 0
TOTAL NO. OF OBSERVATIONS = 3181
SAMPLE INTERVAL = 10 MINUTES



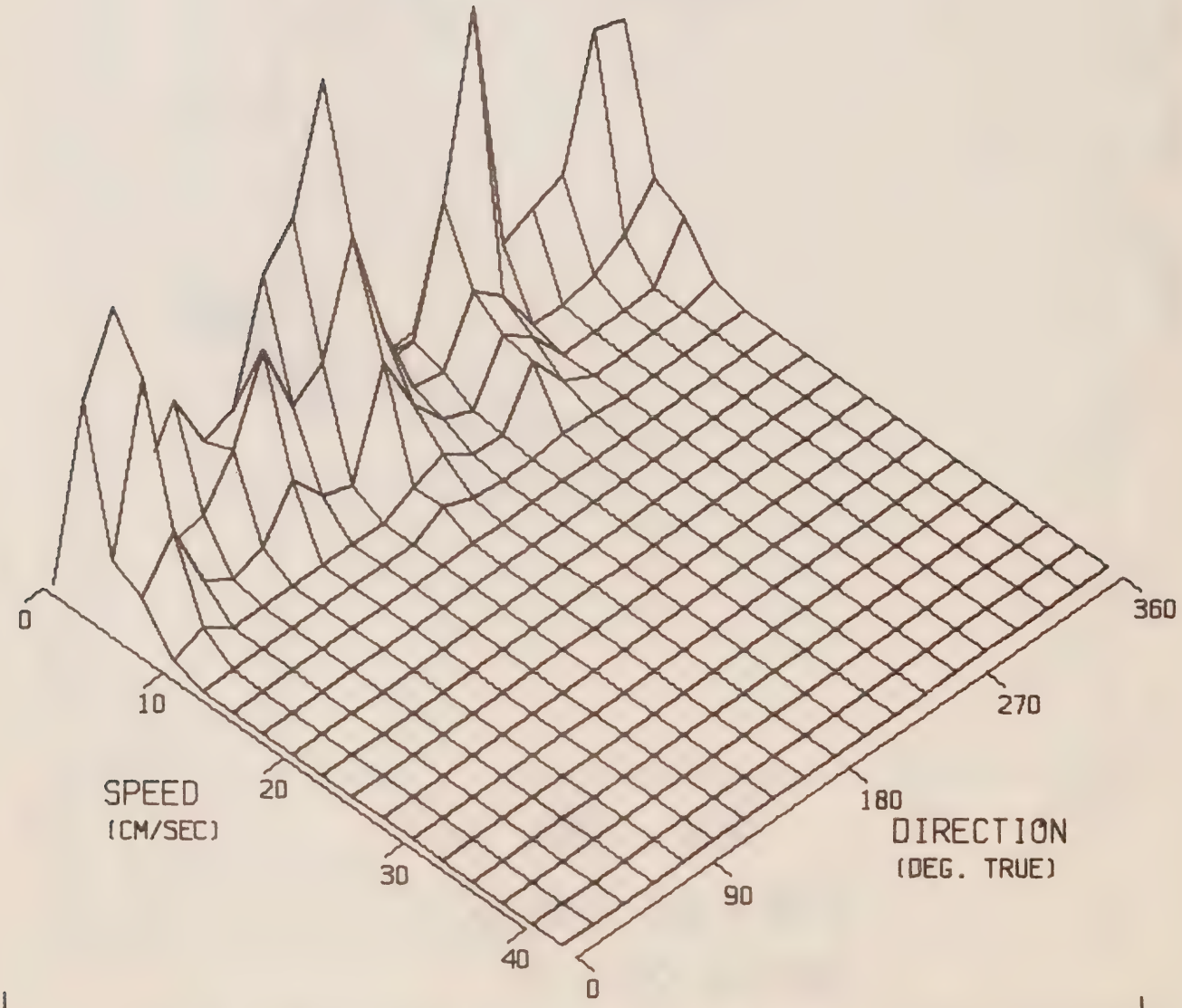
STN. NO. HS-3

DEPTH 235 M.

STARTING DATE: 31/ 8/72 ENDING DATE: 20/ 9/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 235 M.
STARTING DATE: 31/ 8/72
NO. OF SAMPLES = 2847



STN. NO. HS-3 DEPTH 235 M.

STARTING DATE:31/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	078	057	007										142
15- 29	135	150	016										301
30- 44	032	029	002										63
45- 59	059	026											85
60- 74	045	025											70
75- 89	035	048											83
90-104	041	091	002										134
105-119	059	094											153
120-134	095	037	001										133
135-149	106	054	001										161
150-164	175	114	010	007									306
165-179	073	131	027	001		001							233
180-194	038	030	006										74
195-209	011	021	005										37
210-224	007	017											24
225-239	034	010	008										52
240-254	096	083	054	002									235
255-269	142	026											168
270-284	038	002											40
285-299	026	003											29
300-314	035	005											40
315-329	040	005											45
330-344	090	011											101
345-359	093	041	002										136
	1583		141		0		0		0		0		2845
		1110		10		1		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 2

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 235M START DATE 31/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70 140 210 280 350
2	0	0	
6	0	0	
10	0	0	
14	682	24	**********
18	213	7	**********
22	172	6	**********
26	162	6	**********
30	175	6	**********
34	179	6	**********
38	143	5	**********
42	139	5	**********
46	148	5	**********
50	131	5	**********
54	146	5	**********
58	112	4	**********
62	105	4	**********
66	85	3	**********
70	66	2	**********
74	35	1	**********
78	0	0	
82	30	1	**********
86	19	1	**********
90	23	1	**********
94	19	1	**********
98	18	1	**********
102	9	0	**********
106	10	0	**********
110	6	0	**********
114	3	0	
118	4	0	**********
122	4	0	**********
126	2	0	
130	2	0	
134	1	0	
138	0	0	
142	1	0	
146	0	0	
150	0	0	
154	0	0	
158	0	0	

NO. OF SAMPLES OVER 160 = 3
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2847
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 235M START DATE 31/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	97	3	**********
15	126	4	**********
25	226	8	**********
35	38	1	********
45	48	2	**********
55	57	2	**********
65	55	2	**********
75	43	2	**********
85	66	2	**********
95	89	3	**********
105	98	3	**********
115	98	3	**********
125	87	3	**********
135	113	4	**********
145	97	3	**********
155	205	7	**********
165	205	7	**********
175	126	4	**********
185	54	2	**********
195	35	1	*******
205	15	1	***
215	15	1	***
225	23	1	*****
235	40	1	********
245	160	6	**********
255	180	6	**********
265	67	2	**********
275	26	1	*****
285	16	1	***
295	24	1	*****
305	25	1	*****
315	22	1	****
325	38	1	********
335	66	2	**********
345	76	3	**********
355	91	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

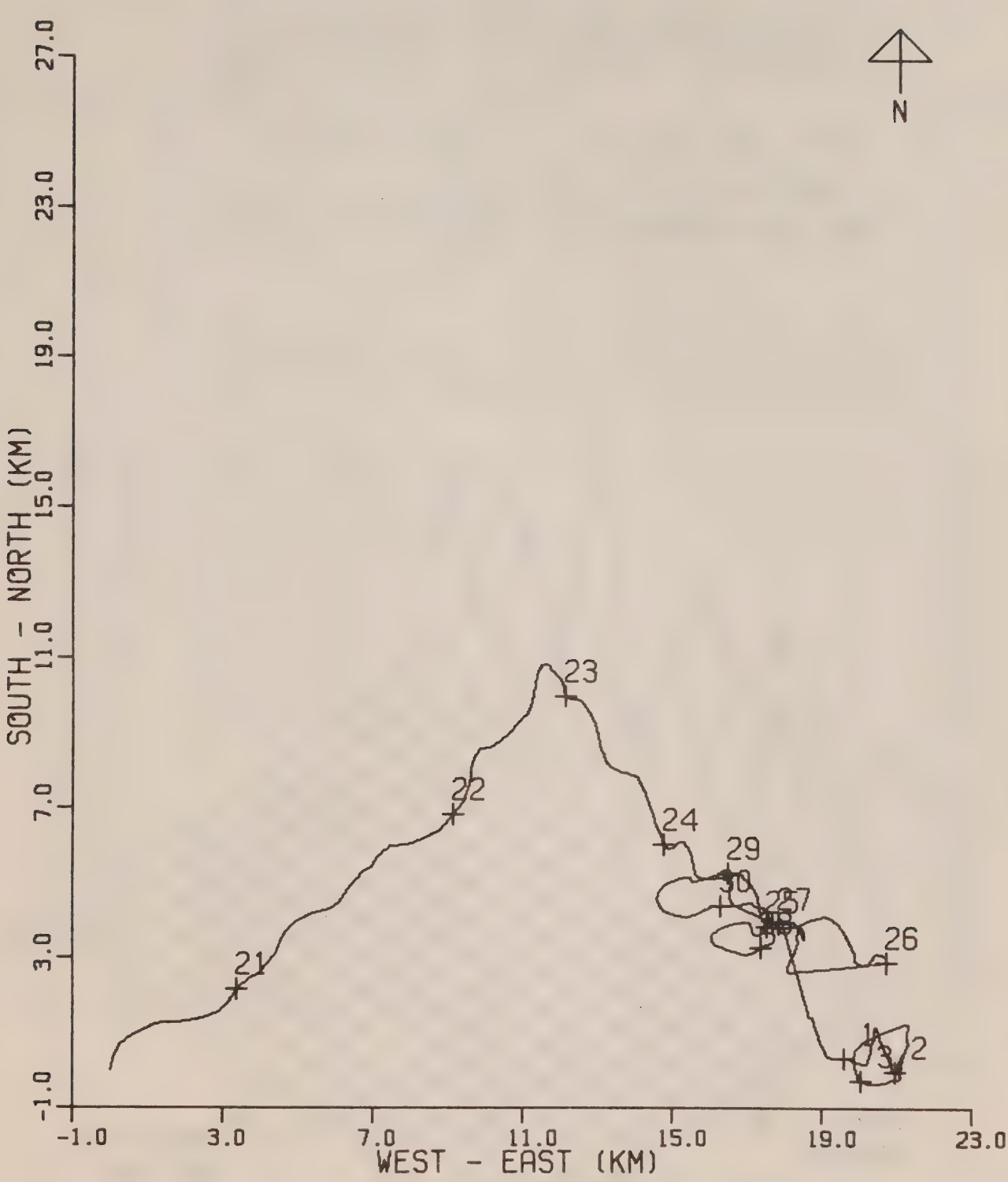
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2847
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 235M START DATE 31/08/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	180 360 540 720 900
8.11	0	0	
8.13	0	0	
8.15	0	0	
8.17	0	0	
8.19	0	0	
8.21	0	0	
8.23	0	0	
8.25	0	0	
8.27	0	0	
8.29	0	0	
8.31	0	0	
8.33	0	0	
8.35	0	0	
8.37	6	0	
8.39	0	0	
8.41	14	0	*
8.43	17	1	*
8.45	0	0	
8.47	93	3	*****
8.49	0	0	
8.51	141	5	********
8.53	268	9	**********
8.55	0	0	
8.57	667	23	**********
8.59	0	0	
8.61	1027	36	**********
8.63	270	9	**********
8.65	0	0	
8.67	139	5	********
8.69	112	4	******
8.71	0	0	
8.73	58	2	***
8.75	0	0	
8.77	35	1	**
8.79	0	0	
8.81	0	0	
8.83	0	0	
8.85	0	0	
8.87	0	0	
8.89	0	0	

NO. OF SAMPLES OVER 8.90 = 0
NO. OF SAMPLES UNDER 8.10 = 0
TOTAL NO. OF OBSERVATIONS = 2847
SAMPLE INTERVAL = 10 MINUTES



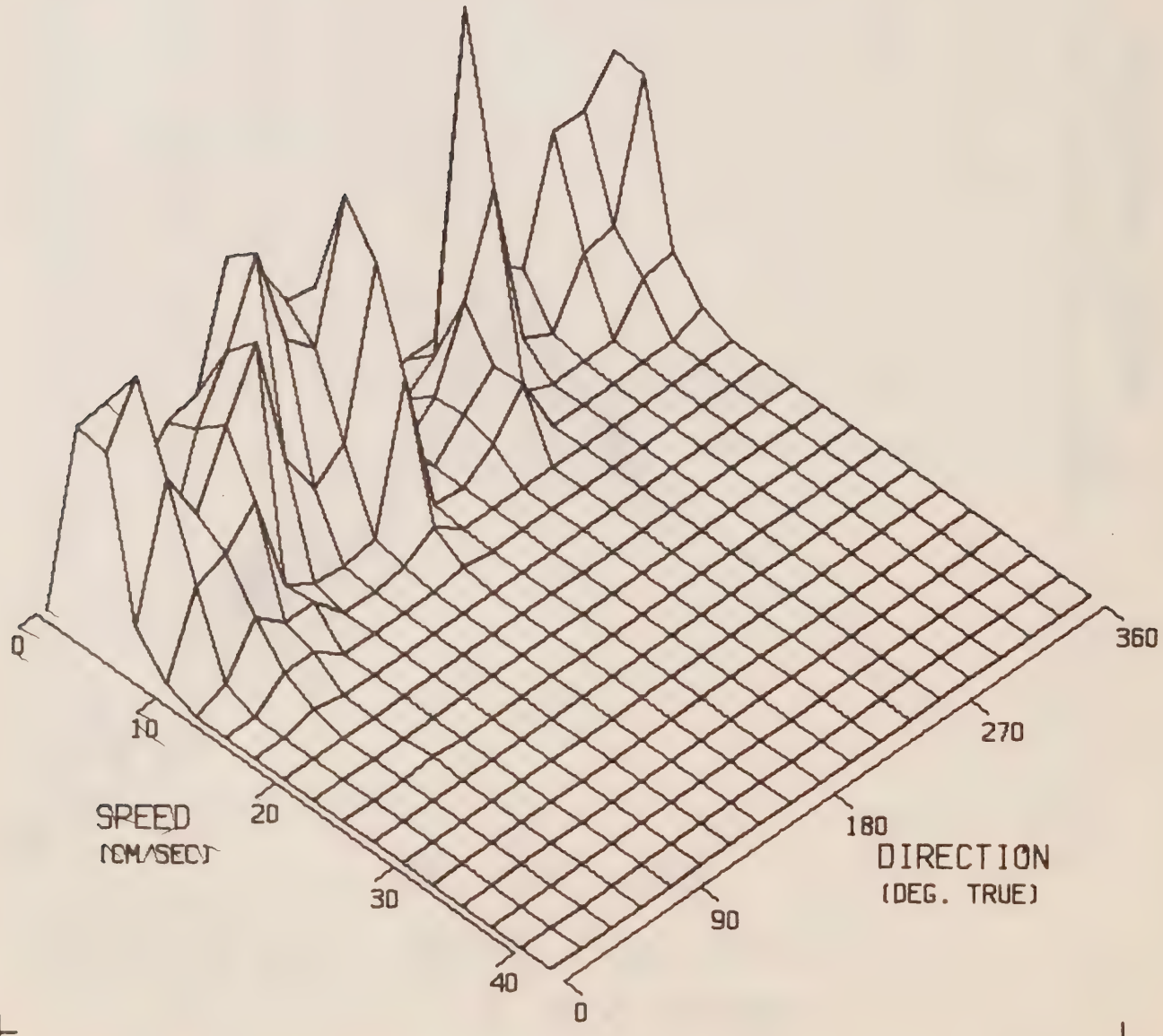
STN. NO. HS-3

DEPTH 235 M.

STARTING DATE: 20/ 9/72 ENDING DATE: 3/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN_NO. HS-3 DEPTH 235 M.
STARTING DATE: 20/ 9/72
NO_OF SAMPLES = 1898



STN. NO. HS-3 DEPTH 235 M.

STARTING DATE:20/ 9/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	035	057	013										105
15- 29	046	079	035	001									161
30- 44	019	023	030	011	001								84
45- 59	026	033	047	008	001								115
60- 74	032	061	036	007			001						137
75- 89	026	083	013	005									127
90-104	053	075	005										133
105-119	042	063	007										112
120-134	050	038	006										94
135-149	037	042	007										86
150-164	033	101	043	003									180
165-179	036	045	020	001									102
180-194	013	001	001										15
195-209	001												1
210-224		007	005										12
225-239	004	017	006										27
240-254	022	042	017										81
255-269	072	037											109
270-284	016	004											20
285-299	011	004											15
300-314	015	001											16
315-329	033	015											48
330-344	020	024											44
345-359	049	020	001										70
	691		292		2		1		0		0		1894
		872		36		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 4

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 235M START DATE 20/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
2	0	0	
6	0	0	
10	0	0	
14	140	7	**********
18	67	4	**********
22	81	4	**********
26	111	6	**********
30	142	7	**********
34	150	8	**********
38	117	6	**********
42	125	7	**********
46	88	5	**********
50	89	5	**********
54	86	5	**********
58	105	6	**********
62	80	4	**********
66	66	3	**********
70	60	3	**********
74	56	3	**********
78	0	0	
82	53	3	**********
86	60	3	**********
90	54	3	**********
94	38	2	********
98	28	1	******
102	22	1	****
106	10	1	**
110	9	0	**
114	11	1	**
118	7	0	*
122	7	0	*
126	8	0	**
130	5	0	*
134	3	0	*
138	2	0	
142	4	0	*
146	2	0	
150	3	0	*
154	1	0	
158	1	0	

NO. OF SAMPLES OVER 160 = 7
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1898
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 235M START DATE 20/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	81	4	**********
15	58	3	*******
25	133	7	**********
35	55	3	*******
45	64	3	********
55	88	5	**********
65	89	5	**********
75	86	5	**********
85	89	5	**********
95	86	5	**********
105	91	5	**********
115	61	3	********
125	67	4	*********
135	55	3	*******
145	60	3	********
155	129	7	**********
165	103	5	**********
175	43	2	******
185	14	1	**
195	2	0	*
205	0	0	
215	7	0	*
225	15	1	**
235	22	1	***
245	42	2	*****
255	118	6	**********
265	28	1	****
275	16	1	**
285	9	0	*
295	11	1	*
305	4	0	*
315	25	1	***
325	35	2	*****
335	22	1	***
345	51	3	*******
355	39	2	*****
365	0	0	
375	0	0	
385	0	0	
395	0	0	

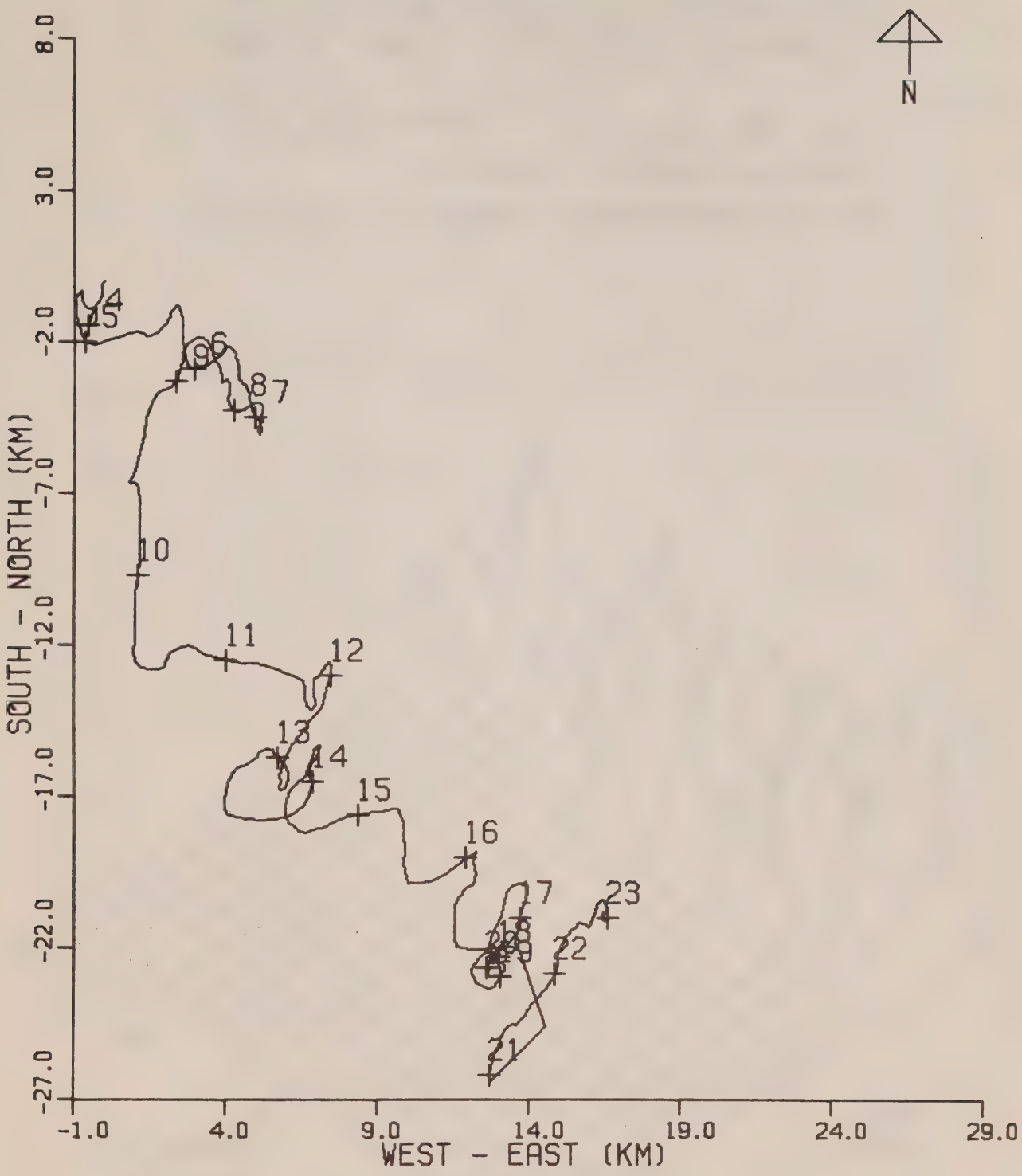
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1898
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-3 DEPTH 235M START DATE 20/09/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	100 200 300 400 500
8.51	0	0	
8.53	0	0	
8.55	0	0	
8.57	0	0	
8.59	0	0	
8.61	0	0	
8.63	2	0	
8.65	0	0	
8.67	10	1	*
8.69	29	2	***
8.71	0	0	
8.73	23	1	**
8.75	0	0	
8.77	19	1	**
8.79	40	2	****
8.81	0	0	
8.83	21	1	**
8.85	0	0	
8.87	29	2	***
8.89	129	7	**********
8.91	0	0	
8.93	238	13	**********
8.95	0	0	
8.97	554	29	**********
8.99	236	12	**********
9.01	0	0	
9.03	327	17	**********
9.05	0	0	
9.07	181	10	**********
9.09	57	3	******
9.11	0	0	
9.13	2	0	
9.15	0	0	
9.17	0	0	
9.19	0	0	
9.21	0	0	
9.23	0	0	
9.25	0	0	
9.27	0	0	
9.29	0	0	

NO. OF SAMPLES OVER 9.30 = 0
NO. OF SAMPLES UNDER 8.50 = 1
TOTAL NO. OF OBSERVATIONS = 1898
SAMPLE INTERVAL = 10 MINUTES



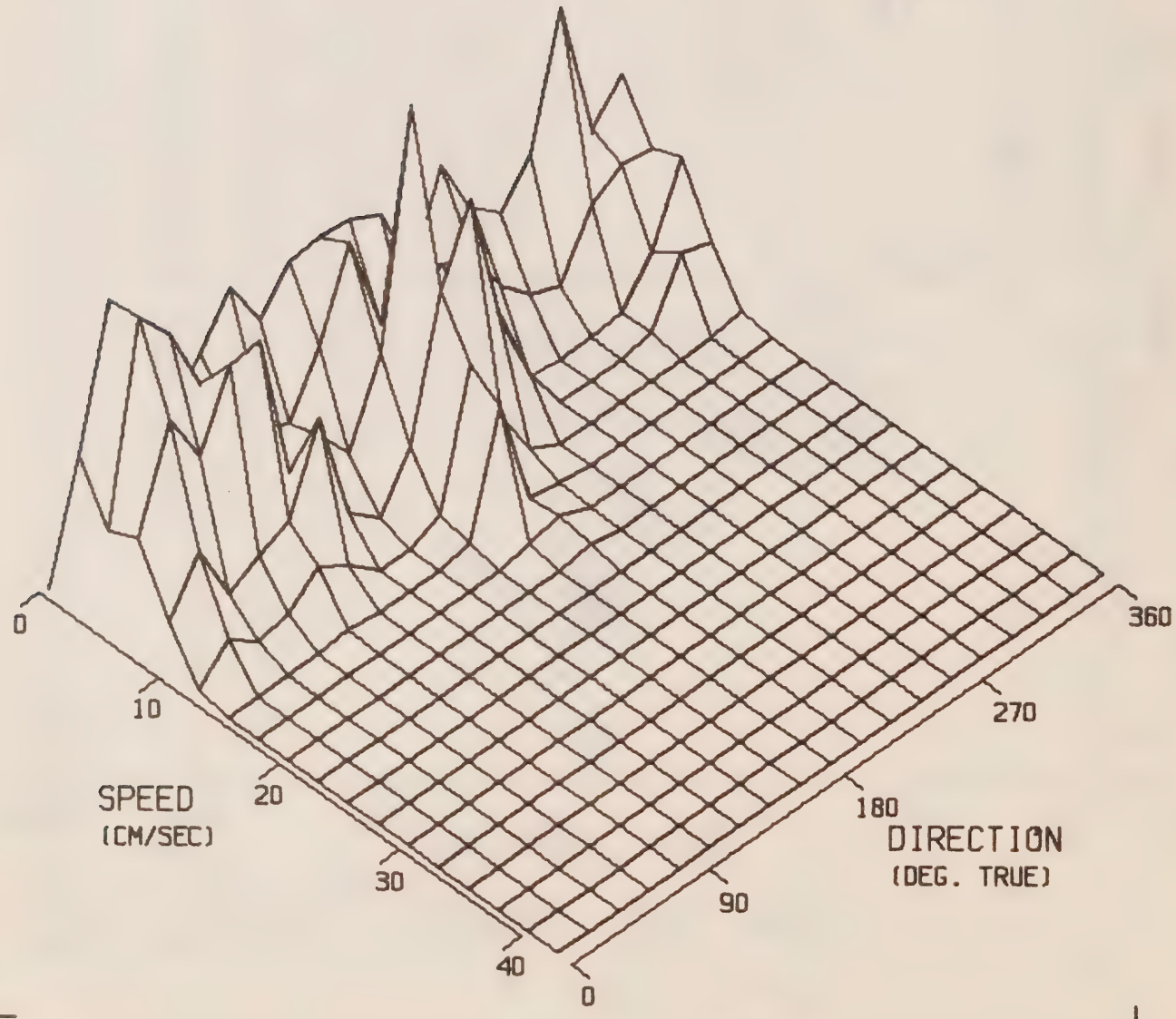
STN. NO. HS-3

DEPTH 235 M.

STARTING DATE: 3/10/72 ENDING DATE: 23/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 235 M.
STARTING DATE: 3/10/72
NO. OF SAMPLES = 2836



STN. NO. HS-3 DEPTH 235 M.

STARTING DATE: 3/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO	
DIR	039	079	119	159	199	239	279	319	359	399	439	479	
0- 14	047	055	031	001									134
15- 29	073	103	046	002									224
30- 44	062	097	028	002									189
45- 59	028	064	017										109
60- 74	027	083	025	003									138
75- 89	044	072	036	009									161
90-104	053	032	049	002									136
105-119	035	040	024	002									101
120-134	050	039	008										97
135-149	038	036	004										78
150-164	037	062	018										117
165-179	060	106	051	028	002								247
180-194	042	051	094	047									234
195-209	043	037	080	005	006								171
210-224	018	037	061	002									118
225-239	037	032	020										89
240-254	047	057	006										110
255-269	027	010											37
270-284	024	006											30
285-299	027	008											35
300-314	034	013											47
315-329	065	021	001										87
330-344	035	027	021										83
345-359	012	035	012	001									60
	965		632		8		0		0		0		2832
		1123		104		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 4

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 235M START DATE 03/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 60 120 180 240 300 . . . . .
2	0	0	
6	0	0	
10	0	0	
14	512	18	**********
18	86	3	**********
22	95	3	**********
26	87	3	**********
30	88	3	**********
34	97	3	**********
38	119	4	**********
42	110	4	**********
46	121	4	**********
50	117	4	**********
54	112	4	**********
58	121	4	**********
62	107	4	**********
66	112	4	**********
70	106	4	**********
74	100	4	**********
78	0	0	
82	95	3	**********
86	92	3	**********
90	87	3	**********
94	95	3	**********
98	64	2	**********
102	51	2	*********
106	50	2	********
110	40	1	*******
114	29	1	*****
118	29	1	*****
122	16	1	***
126	17	1	***
130	9	0	**
134	18	1	***
138	14	0	**
142	10	0	**
146	4	0	*
150	6	0	*
154	8	0	*
158	2	0	

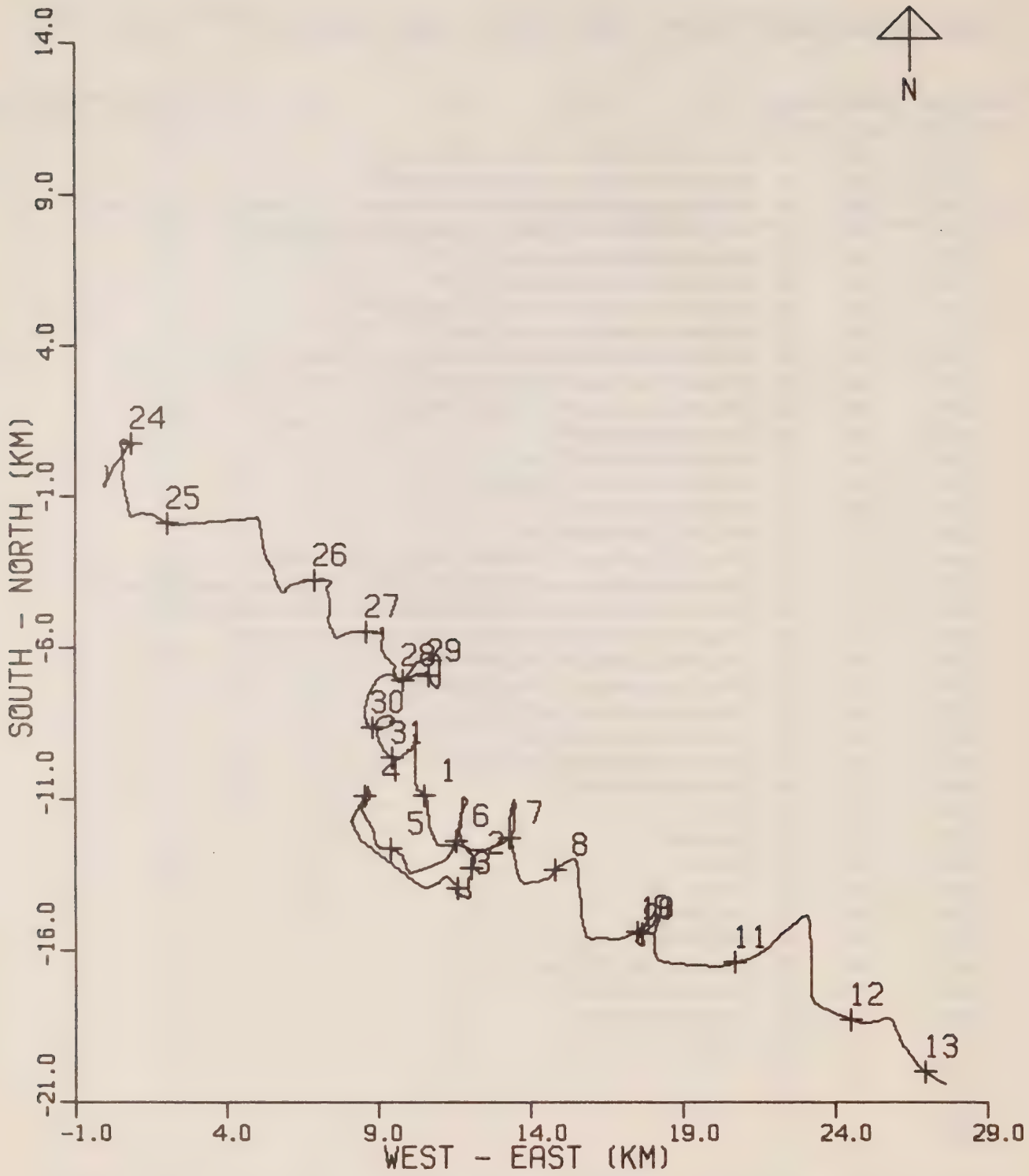
NO. OF SAMPLES OVER 160 = 13
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2839
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 235M START DATE 03/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	40 80 120 160 200
5	96	3	**********
15	104	4	**********
25	180	6	**********
35	136	5	**********
45	66	2	**********
55	84	3	**********
65	105	4	**********
75	78	3	**********
85	118	4	**********
95	82	3	**********
105	91	3	**********
115	56	2	**********
125	58	2	**********
135	72	3	**********
145	50	2	**********
155	62	2	**********
165	133	5	**********
175	187	7	**********
185	159	6	**********
195	137	5	**********
205	88	3	**********
215	93	3	**********
225	62	2	**********
235	58	2	**********
245	79	3	**********
255	47	2	**********
265	15	1	****
275	22	1	******
285	22	1	******
295	26	1	*******
305	25	1	******
315	56	2	**********
325	54	2	**********
335	54	2	**********
345	49	2	**********
355	35	1	*********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2839
SAMPLE INTERVAL = 10 MINUTES



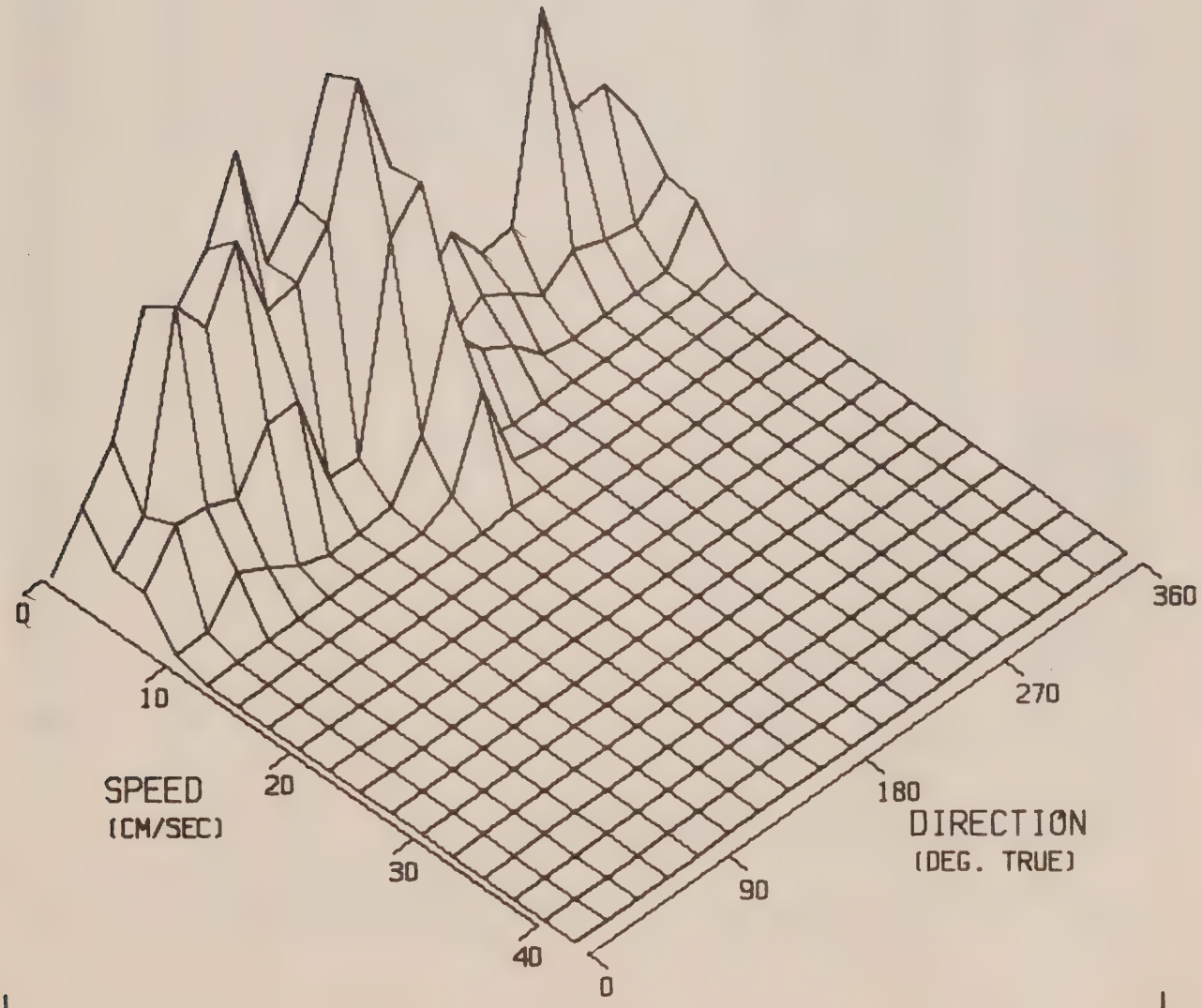
STN. NO. HS-3

DEPTH 235 M.

STARTING DATE: 23/10/72 ENDING DATE: 13/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 235 M.
STARTING DATE: 23/10/72
NO. OF SAMPLES = 3000



STN. NO. HS-3 DEPTH 235 M.

STARTING DATE:23/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
DIR													
0- 14	035	036	008										79
15- 29	041	045	010										96
30- 44	068	110	015										193
45- 59	068	059	021										148
60- 74	069	116	018										203
75- 89	079	113	002										194
90-104	110	111	004										225
105-119	054	064	002										120
120-134	074	072											146
135-149	064	081	002										147
150-164	111	145	024										280
165-179	070	166	098	018									352
180-194	072	101	045	012									230
195-209	038	046	002										86
210-224	020	028	003										51
225-239	014	016	001										31
240-254	040	037											77
255-269	015	013											28
270-284	019	006											25
285-299	063	010											73
300-314	062	011											73
315-329	039	010											49
330-344	052	008											60
345-359	015	013	002										30
	1292		257		0		0		0		0		2996
		1417		30		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 4

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 235M START DATE 23/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	90 180 270 360 450
2	0	0	
6	0	0	
10	0	0	
14	423	14	**********
18	196	7	**********
22	159	5	**********
26	165	6	**********
30	177	6	**********
34	172	6	**********
38	199	7	**********
42	162	5	**********
46	184	6	**********
50	178	6	**********
54	141	5	**********
58	146	5	**********
62	124	4	**********
66	113	4	**********
70	106	4	**********
74	64	2	*******
78	0	0	
82	58	2	******
86	48	2	*****
90	38	1	****
94	32	1	****
98	23	1	***
102	11	0	*
106	15	1	**
110	13	0	*
114	12	0	*
118	7	0	*
122	4	0	
126	8	0	*
130	11	0	*
134	6	0	*
138	1	0	
142	0	0	
146	0	0	
150	0	0	
154	0	0	
158	0	0	

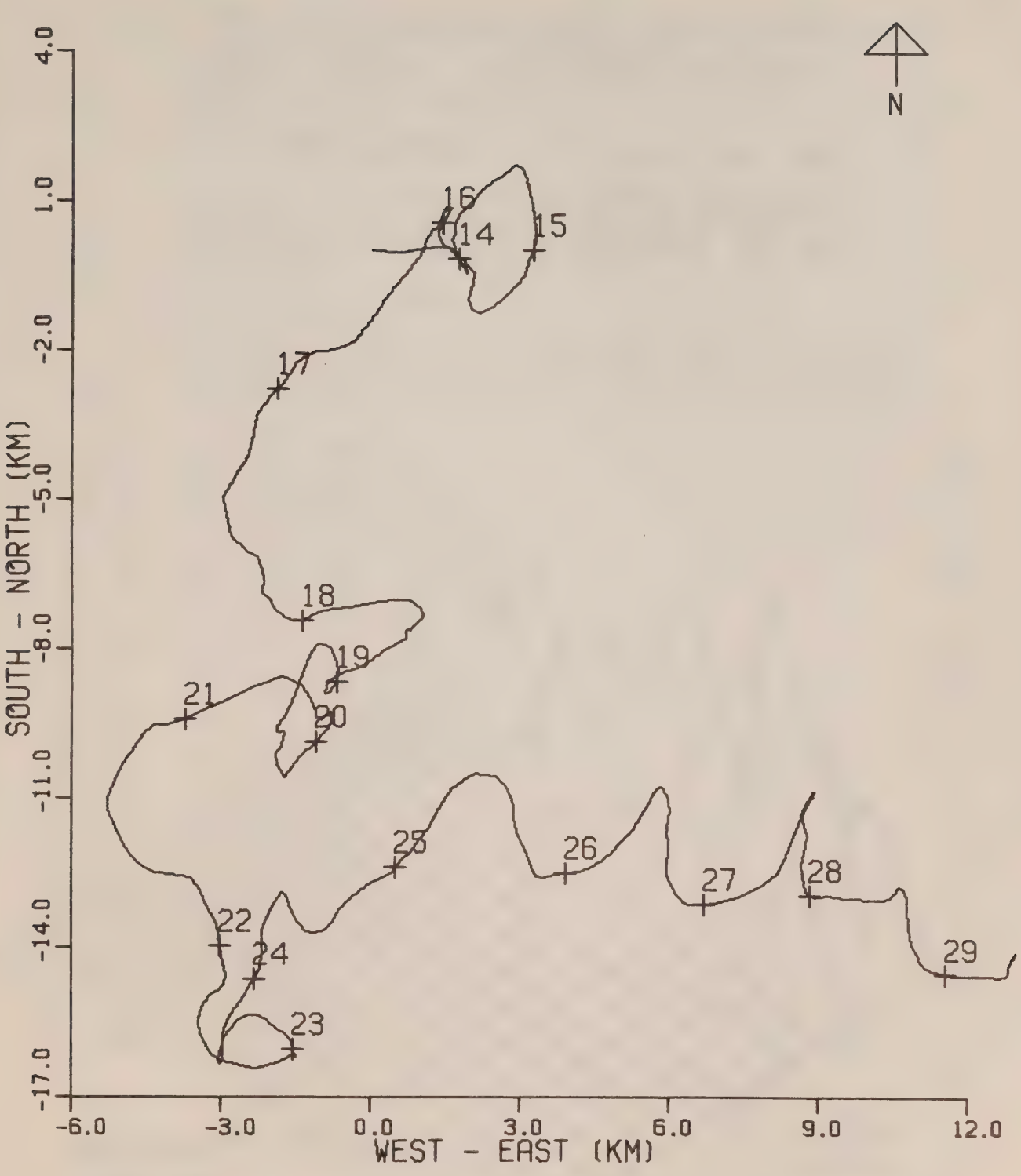
NO. OF SAMPLES OVER 160 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 235M START DATE 23/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	57	2	**********
15	54	2	**********
25	72	2	**************
35	140	5	*****************************
45	117	4	************************
55	85	3	*****************
65	132	4	***************************
75	149	5	*******************************
85	124	4	*************************
95	154	5	********************************
105	108	4	**********************
115	74	2	***************
125	100	3	********************
135	89	3	******************
145	116	4	************************
155	194	6	**
165	203	7	**
175	241	8	**
185	158	5	*********************************
195	94	3	********************
205	42	1	********
215	41	1	********
225	22	1	****
235	23	1	*****
245	57	2	**********
255	29	1	******
265	14	0	***
275	16	1	***
285	18	1	****
295	65	2	**************
305	56	2	**********
315	35	1	*******
325	34	1	*******
335	49	2	**********
345	17	1	***
355	21	1	****
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES



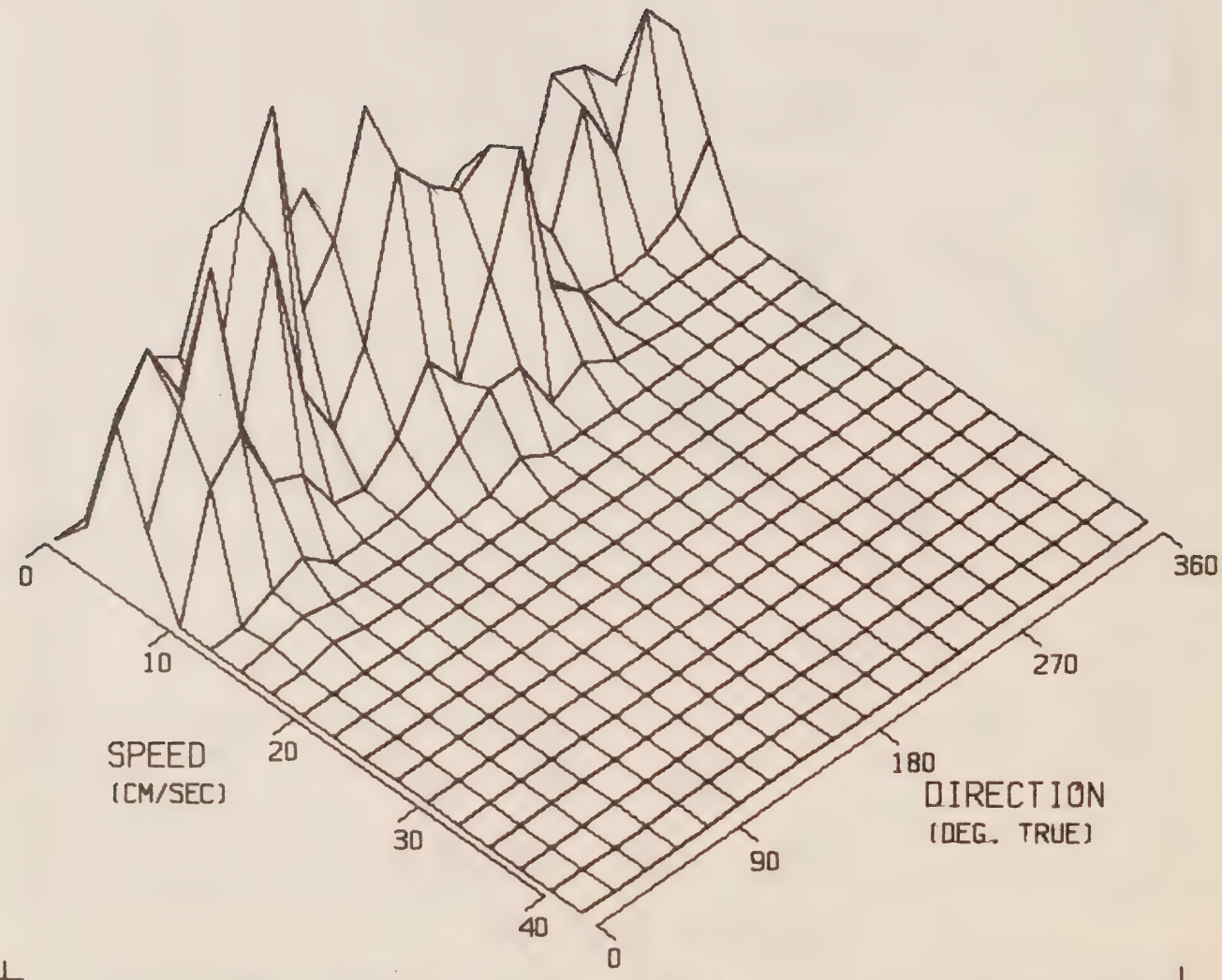
STN. NO. HS-3

DEPTH 235 M.

STARTING DATE: 13/11/72 ENDING DATE: 29/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-3 DEPTH 235 M.
STARTING DATE: 13/11/72
NO. OF SAMPLES = 2365



STN. NO. HS-3 DEPTH 235 M.

STARTING DATE:13/11/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO	
DIR	039	079	119	159	199	239	279	319	359	399	439	479	
0- 14	012	047	003										62
15- 29	024	063	044	001									132
30- 44	037	072	059	002	002								172
45- 59	020	042	031	005									98
60- 74	036	047	021										104
75- 89	048	089	027										164
90-104	032	109	009										150
105-119	031	034	002	001									68
120-134	043	057	007										107
135-149	045	044	016	001									106
150-164	029	100	036	005									170
165-179	018	076	027	012									133
180-194	010	063	038	003									114
195-209	006	051	045	008									110
210-224	019	053	089										161
225-239	015	029	030										74
240-254	031	052	041										124
255-269	017	014	007										38
270-284	011	009	001	001									22
285-299	014	016											30
300-314	038	033											71
315-329	028	014											42
330-344	027	050											77
345-359	004	029	003										36
	595		536		2		0		0		0		2365
		1193		39		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-3 DEPTH 235M START DATE 13/11/72

MEDIAN (MM/S)	FREQUNCY NO.	PCT	. 40 . 80 . 120 . 160 . 200 .
2	0	0	
6	0	0	
10	0	0	
14	138	6	**********
18	86	4	**********
22	64	3	**********
26	77	3	**********
30	106	4	**********
34	125	5	**********
38	134	6	**********
42	144	6	**********
46	126	5	**********
50	138	6	**********
54	125	5	**********
58	133	6	**********
62	105	4	**********
66	108	5	**********
70	98	4	**********
74	83	4	**********
78	0	0	
82	93	4	**********
86	108	5	**********
90	93	4	**********
94	75	3	**********
98	50	2	**********
102	38	2	**********
106	21	1	*****
110	16	1	****
114	21	1	*****
118	21	1	*****
122	8	0	**
126	7	0	**
130	11	0	***
134	2	0	*
138	3	0	*
142	2	0	*
146	2	0	*
150	3	0	*
154	2	0	*
158	0	0	

NO. OF SAMPLES OVER 160 = 3
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2369
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-3 DEPTH 235M START DATE 13/11/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	44	2	**********
15	39	2	**********
25	125	5	**********
35	122	5	**********
45	83	4	**********
55	57	2	**********
65	60	3	**********
75	102	4	**********
85	122	5	**********
95	105	4	**********
105	68	3	**********
115	29	1	**********
125	70	3	**********
135	66	3	**********
145	81	3	**********
155	120	5	**********
165	98	4	**********
175	92	4	**********
185	69	3	**********
195	73	3	**********
205	74	3	**********
215	126	5	**********
225	59	2	**********
235	50	2	**********
245	78	3	**********
255	65	3	**********
265	15	1	*****
275	18	1	******
285	9	0	***
295	25	1	********
305	55	2	**********
315	25	1	********
325	35	1	**********
335	54	2	**********
345	31	1	**********
355	25	1	********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2369
SAMPLE INTERVAL = 10 MINUTES

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THE HOWE SOUND CURRENT METERING PROGRAM, VOLUME II, DATA REPORT, STN. HS-4

by

W.H. Bell

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-75R37

PACIFIC MARINE SCIENCE REPORT 75-7

THE HOWE SOUND CURRENT METERING PROGRAM, VOLUME II - DATA REPORT, STN. HS-4

by

W.H. Bell

INSTITUTE OF OCEAN SCIENCES, PATRICIA BAY

Victoria, B.C.

June, 1975

This is a manuscript which has received only limited circulation. On citing this report in a bibliography, the title should be followed by the words "UNPUBLISHED MANUSCRIPT" which is in accordance with accepted bibliographic custom.

ABSTRACT

Current meter data, and some temperature and salinity data, obtained for several depths at three locations in Howe Sound are presented in three volumes. The presentations are chiefly statistical in nature. They extend over a period slightly greater than two years, beginning in late 1971.

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INTRODUCTION

In 1971, interest was expressed in examining the oceanographic characteristics of Howe Sound in some detail. The Federal Government had announced that a large rail terminal and deep-water ship docking facility would be established at the head of Howe Sound. This facility would be used to supply much of British Columbia's interior population and industry, and to ship out export materials. As a result, a considerable increase in marine traffic was anticipated, increasing the need for information on tidal currents and other water movements, and increasing the possibilities for contamination of the Sound.

There were other reasons for the interest as well. Several industries having a high pollution potential were already in operation in Howe Sound and, with the construction of the proposed shipping facility, more were likely to be established. Future population expansion in the Lower Mainland area might be met to some extent by residential development in some areas of Howe Sound, with attendant environmental problems such as waste disposal and increased silt loads. The development of a transport or dispersion model for water-quality management in Howe Sound was proposed, which would require an oceanographic data input. In addition, various biological, chemical and ecological studies were underway or proposed for the Sound, most of which required some knowledge of the oceanographic features of the area.

Only a limited amount of data was available from previous studies, principally those of Waldichuk et al (1968) who conducted periodic cruises to the vicinity of a number of effluent-producing industries. The current measurements were sparse, and were obtained using surface drogues and Ekman current meters deployed over the side of a ship. The Institute of Oceanography at the University of British Columbia had also obtained a small amount of data in Howe Sound.

The measurement program subsequently undertaken consisted of two hydrographic cruises and a series of moored-buoy installations. The cruise data has been previously reported (Bell, 1974). The purpose of the present report is to present the data obtained by instruments suspended beneath the buoys, principally current speed and direction, accompanied much of the time by temperature values and occasionally by salinities.

OBSERVATIONAL PROCEDURES

The current-metering program in Howe Sound, using taut-line moored buoys, originally anticipated that six stations would be occupied for a period of up to a year each. At every station, several self-recording current meters would be suspended at various depths below the surface. An anemometer would be mounted on each buoy for wind measurements. As it developed, there were only sufficient resources available to maintain two stations at a time, and only three stations were occupied. Also, there was only one anemometer available for a short period of time and it malfunctioned.

The program commenced in November, 1971 with a buoy installation at Station HS-4 (Fig. 1). Current meters were placed at depths of 3, 10, 30, and 130 metres from the surface. The water depth was 145 metres. Measurements at

this station continued through to November, 1972. A second installation was made at Station HS-3, commencing in February, 1972 and continuing through to November of that year. In this case, current meters were located at depths of 3, 10, 30 and 235 metres, with a water depth of about 250 metres. The final station to be monitored was HS-5. This station is a short distance inside the sill in Howe Sound (Fig. 2). Here, sufficient current meters were being used so that it was decided to install two separate arrays about 250 metres apart, thus reducing the loss if a buoy should chance to be snagged by the tow line of one of the many tug boats traversing the area. The first buoy was installed at the end of November, 1972 and the second in January, 1973. Current meters were located at up to eight different depths for varying periods of time. The arrays were finally removed in February, 1974. Generally speaking, the instruments were deployed for about six weeks at a time, after which they were recovered for replacement of batteries and magnetic recording tape. The principal vessel used in this work was F.R.B. A.P. KNIGHT.

Two types of current meters were employed in the program. The Geodyne Model A-850 was used in the near-surface position (about 3 metres depth) because it has a small directional vane enclosed within a cage. Thus, it was unlikely to tangle with the anchor line of the buoy in the event of turbulent surface motions. The Aanderaa Model 4 was used at all other depths. It does have a large unprotected directional fin which could cause problems if placed too close to the buoy. The manufacturer of the Geodyne meter claims a threshold velocity of 26 mm/s, a speed accuracy of 26 mm/s for speeds below 500 mm/s and a direction accuracy of ± 10 degrees. The calibration factor given for the Aanderaa meter implies a threshold velocity of 15 mm/s. The direction accuracy is ± 5 degrees. The Aanderaa meter is fitted with a thermistor, providing temperatures with a resolution of about 0.02 degrees C. Some of these meters also have conductivity sensors with a resolution of 0.07 mmhos. The Geodyne meter samples in "bursts", recording 15 measurements spaced 5 seconds apart and repeating the procedure every 15 minutes. The vector average of the 15 measurements is used in subsequent processing. The Aanderaa meter takes a single sample of direction for each 10 minute interval, but integrates the speed over this whole period. The two types of current meters have been described in more detail by Tabata et al (1971).

Although no wind data were obtained at the actual buoy locations, some observations are available from nearby points. The Atmospheric Environment Service of Environment Canada maintains an anemometer at the head of Howe Sound. As one might expect from the topography of the area, there appears to be a reasonable correlation between the north-south components of wind velocity measured at this location and those experienced at seaward points along the axis of the Sound (except occasionally in one or two locations where the flow of cold air down a hanging valley complicates the situation). Also, Dr. L. Giovando at the Pacific Environment Institute in West Vancouver had several anemometers deployed at various locations in Howe Sound during 1972-73. In particular, one was positioned on Pam Rock, near Station HS-3.

DATA PROCESSING AND PRESENTATION

The raw data tapes from the Geodyne meters had to be sent to the instrument manufacturer (E.G. & G., Waltham, Mass.) for translation to an IBM-compatible format. They returned a 9-track magnetic tape, containing the translated data, for further processing as required. The raw data tapes from the Aanderaa instruments were translated in-house, using a HP2115 mini-computer and software developed by Del Smith. Second stage processing of the translated data consisted of formatting the data for FORTRAN routines and applying appropriate calibration factors where necessary. During this stage, an acceleration criterion and an interpolation scheme were applied to speed data to smooth out any unrealistic variations or 'spikes'. These spikes arose from readings in the dead-band area of the speed potentiometer and from tape noise.

Requests received from biologists and ecologists indicated a preference for examination of the data in graphical form, such as histograms and progressive vector diagrams (PVD's), rather than in time series form. Therefore, the data are presented here in the following forms:

(a) PVD

(b) Frequency distribution plot for speed and direction

(c) Frequency distribution list for speed and direction

(d) Speed histogram

(e) Direction histogram

(f) Temperature histogram (when available)

(g) Salinity histogram (when available).

The processing routines were written so that each of these presentations came directly from the computer in page size. This allowed the printer to use them directly without resorting to photographic reduction first. It was necessary to break the information contained on a data tape into two or three smaller segments to avoid cluttering the PVD's. A data length of about 3 weeks appeared optimum, so the basic segments for presentation were taken to be 2000 records for Geodyne tapes (15 min. sample interval) and 3000 records for Aanderaa tapes (10 min. interval). If the number of records left at the end of a tape was less than 1/3 of the basic number, then these records were grouped with the preceding segment. The initial segment of each data tape contained a varying number of records which were of no value because they represent samples taken after the instruments were switched on but before they were in position in the water. Such samples were included in the translation procedure for timing purposes but were omitted from subsequent processing. Thus, in the presentations, some of the initial segments have fewer than 2000 or 3000 records, and some of the final segments have more. Hourly averages were used in plotting the PVD's. The frequency distribution diagrams have a change in the scale of the speed axis for water depths of 30 m or more.

The histogram presentations occasionally have truncated peaks. This

was done to provide greater detail in the remainder of the plot. The correct height of the peak is given in the frequency column of the histogram. The resolution available in the data logging process is limited and occasionally results in quirks in the histograms. For example, the temperature resolution is about 0.02°C. Whenever the counting increment for the histogram is also 0.02°C, the result of the interaction is that not all of the increments obtain counts, some being blank or empty. A similar phenomenon occurs in some speed histograms, most notably for the increment from 77-80 mm/sec when the increment size is 4 mm/sec. The output from the Aanderaa current meter represented by the number 15 is processed and rounded off by the computer program to give 76 mm/sec. The number 16 rounds to 81 mm/sec. Thus, there is no possibility of obtaining counts for the increment in question.

Some data were lost due to instrument malfunctions, weak batteries, and water leaks. Some data were not recoverable because of a very low signal-to-noise ratio, apparently resulting from poor or improper tape degaussing techniques. Unfortunately, data analysis was lagging well behind instrument deployment, so some of these problems weren't detected immediately. The lengths of record for the station reported on in this volume, and the reasons for loss of data, are given in Figure 3 and Table I.

Because of the large amount of data involved, the results are presented in three volumes, one dealing with each station. The original data is available on request for anyone wishing to examine the time series obtained for a given period at a particular station and depth.

ACKNOWLEDGEMENTS

The data presented in this series of reports could not have been obtained without the expert work of J.A. Stickland and R.H. Bigham, who designed and supervised the moorings and maintained the instruments. They were ably assisted on occasion by J.H. Meikle and R. Forbes. The captain and crew of F.R.B. A.P. KNIGHT also provided willing support to the undertaking.

Some of the data processing routines were modified from programs kindly supplied by R. Johns. Much of actual mechanics of punching cards and feeding them to the computer was done by C. Goodman.

REFERENCES

Bell, W.H. 1974. Oceanographic Observations in Howe Sound - 1972. Pac. Mar. Sci. Rept. 74-7, Marine Sciences Directorate, Victoria.

Tabata, S., J.A. Stickland and B.R. de Lange Boom. 1971. The Program of Current Velocity and Water Temperature Observations from Moored Instruments in the Strait of Georgia - 1968-1970 and Examples of Records Obtained. Tech. Rept. No. 253, Fish. Res. Bd. Can., Nanaimo.

Waldichuk, M., J.R. Markert and J.H. Meikle. 1968. Fraser River Estuary, Burrard Inlet, Howe Sound and Malaspina Strait Physical and Chemical Oceanographic Data, 1957-1966, Volume II, Sept. 1962 to July 1966. M.S. Rept. Series No. 939, Fish. Res. Bd. Can., Nanaimo.

TABLE I

DATA ACQUISITION AND PROCESSING HISTORY FOR CURRENT METERS AT STN. HS-4

START DAY (PST)	DEPTH (M)	NO. OF RECORDS	DATA TAPE NO.	STAGE 1 TRANSLATION		STAGE 2 TRANSLATION		NOTES
				TAPE NO.	FILE NO.	TAPE NO.	FILE NO.	
29/11/71	3		187/1					
	10	3187	334/4	RE0322	45	RE0158	27	
	30	3182	338/2	RE0322	44	RE0158	26	
	130	666	210/4	RE0322	46	RE0158	28	a,k
21/12/71	3		187/2					
	10	7159	334/5	RE0322	49			j,n
	30	7013	338/3	RE0322	112			j,k
	130	6790	97/14	RE0322	52			b,k
08/02/72	3	3895	187/3	RB0410	3	RB0411	24	
	10	6025	337/4	RE0322	56			j,n
	30	293	333/2	RE0322	57			b,k
	130	5934	211/7	RE0322	58	RE0158	30	
21/03/72	3	3870	236/1	RB0410	6	RB0411	27	
	10	5909	210/5	RE0322	63	RE0158	31	
	30	5937	337/5	RE0322	64			j,m
	130	5934	211/8	RE0322	65	RE0158	32	
01/05/72	3	4236	187/4	RB0410	7	RB0411	37	
	10	6475	98/18	RE0322	69			f,j,k
	30	6414	101/3	RE0322	70			j,k
	130	6465	336/5	RE0322	71			j,k
15/06/72	3	3189	239/4	RB0410	10	RB0411	31	
	10	1137	210/7	RE0322	77			b,k
	30	4928	337/7	RE0322	79			j,m
	130	2711	336/6	RE0322	80			j,k

TABLE I (CONT'D.)

START DAY (PST)	DEPTH (M)	NO. OF RECORDS	DATA TAPE NO.	STAGE 1 TRANSLATION		STAGE 2 TRANSLATION		NOTES
				TAPE NO.	FILE NO.	TAPE NO.	FILE NO.	
17/07/72	3	4796	187/5	RB0410	11	RB0411	32	
	10	6525	101/4	RE0322	84	RE0158	39	
	30	6626	98/19	RE0322	85	RE0158	18	g
	130	6488	336/7	RE0322	86	RE0158	40	
31/08/72	3	3390	239/6	RB0410	13	RB0411	34	
	10	4846	101/5	RE0322	90	RE0158	43	
	30	5116	333/5	RE0322	91	RE0158	44	
	130	5117	211/12	RE0322	92	RE0158	45	
04/10/72	3	4017	241/1	RB0410	14	RB0411	35	
	10	7937	101/6	RE0322	96	RE0158	48	
	30	7954	337/9	RE0322	97	RE0158	49	
	130	7951	210/9	RE0322	98			b,k

NOTES:

a. Instrument failure - water leak
b. Instrument failure - encoder or other data logger fault
c. Instrument failure - weak battery
d. Instrument failure - reason unknown
e. Rotor failure or fault in speed recording channel
f. Compass or vane failure or fault in direction channel
g. Thermistor failure or fault in temperature channel
h. Conductivity sensor failure or fault in conductivity channel
i. Unreliable or "noisy" data - reason unknown
j. Unreliable or "noisy" data - tape degaussing problem
k. Data irretrievable
l. Data retrievable with great difficulty
m. Data retrievable with some difficulty
n. Data retrievable with little difficulty

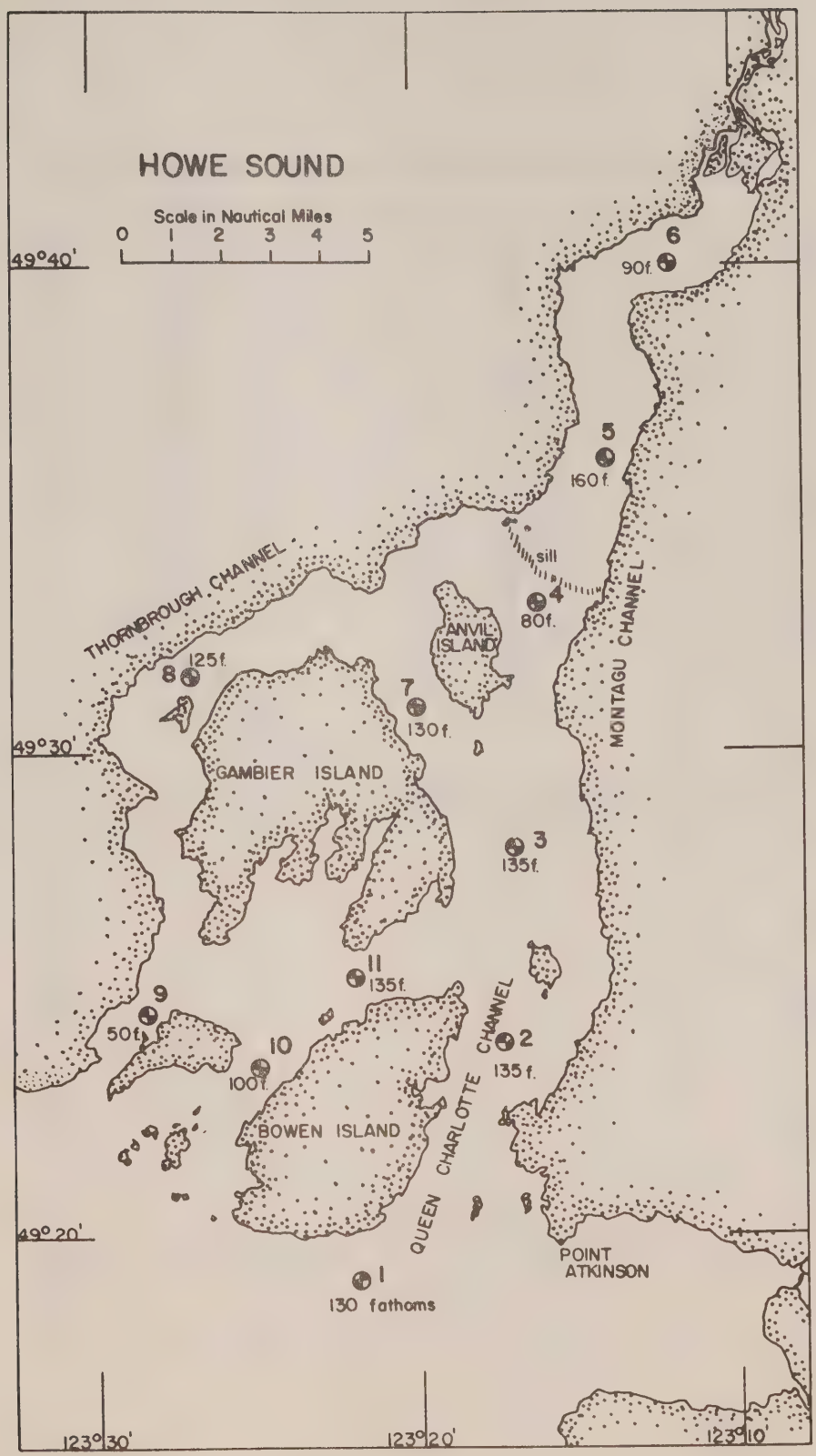

HOWE SOUND
Scale in Nautical Miles
0 1 2 3 4 5
49°40'
49°30'
49°20'
123°30'
123°20'
123°10'
6
90f.
5
160f.
sill
4
80f.
ANVIL ISLAND
THORNBROUGH CHANNEL
MONTAGU CHANNEL
8
125f.
7
130f.
GAMBIER ISLAND
3
135f.
11
135f.
9
50f.
10
100f.
2
135f.
QUEEN CHARLOTTE CHANNEL
BOWEN ISLAND
POINT ATKINSON
1
130 fathoms

Figure 1

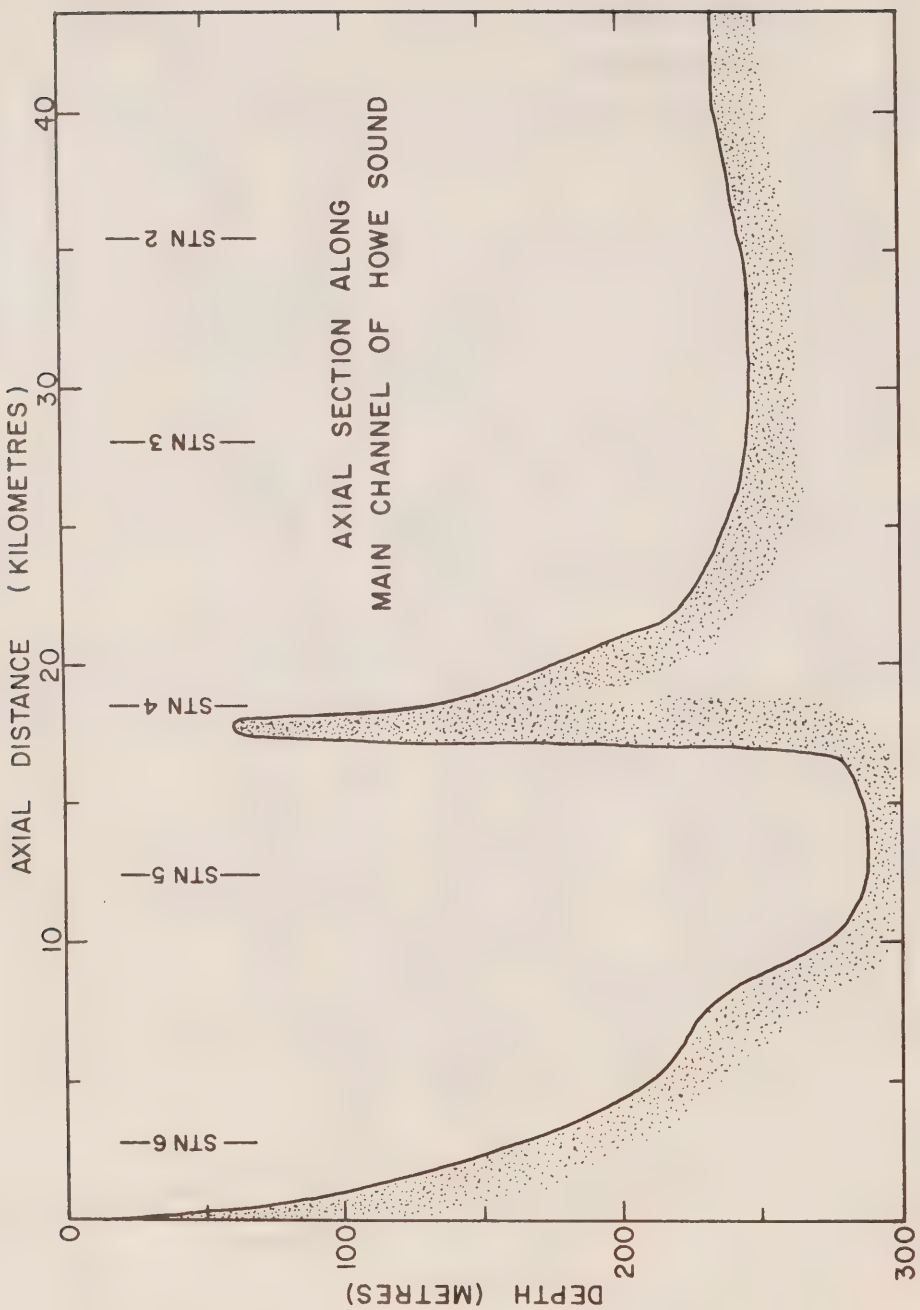

AXIAL SECTION ALONG
MAIN CHANNEL OF HOWE SOUND
STN 2
STN 3
STN 4
STN 5
STN 6
AXIAL DISTANCE (KILOMETRES)
0
10
20
30
40
DEPTH (METRES)
100
200
300

Figure 2

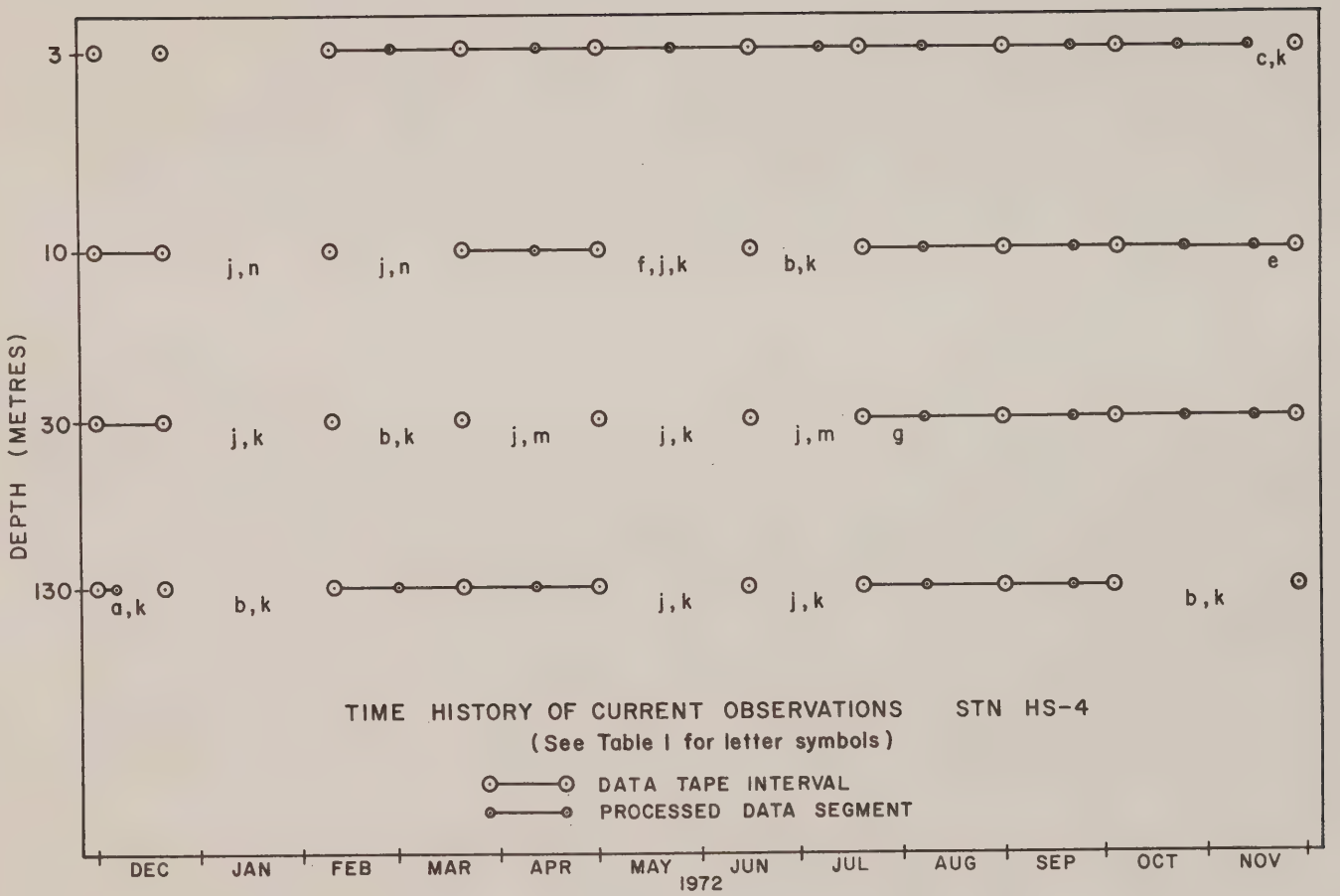
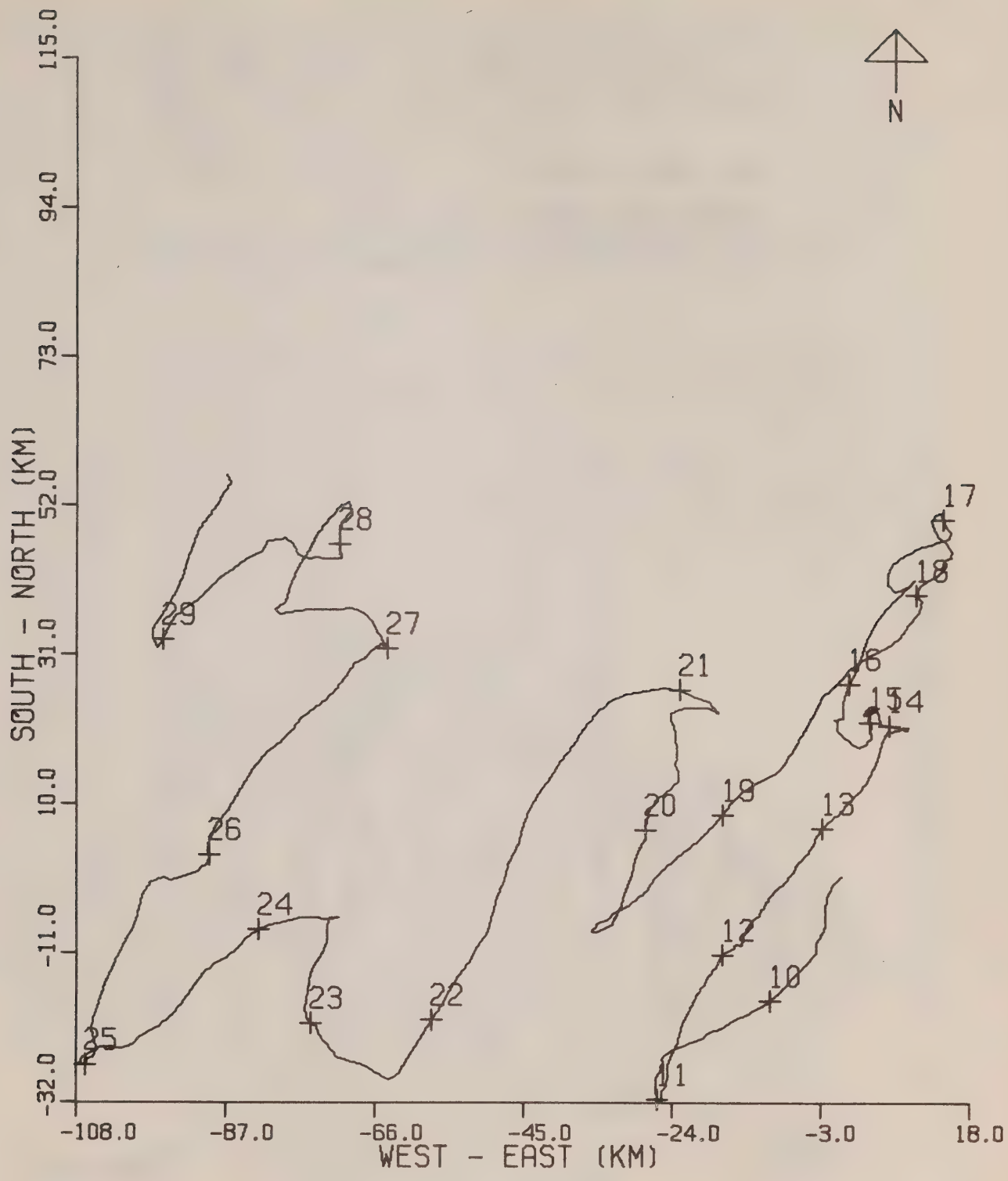

DEPTH (METRES)
3
10
30
130
c,k
j,n
j,n
f,j,k
b,k
e
j,k
b,k
j,m
j,k
j,m
g
a,k
b,k
j,k
j,k
b,k
TIME HISTORY OF CURRENT OBSERVATIONS STN HS-4
(See Table I for letter symbols)
DATA TAPE INTERVAL
PROCESSED DATA SEGMENT
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
1972

Figure 3

DATA FOR 3-METRE DEPTH



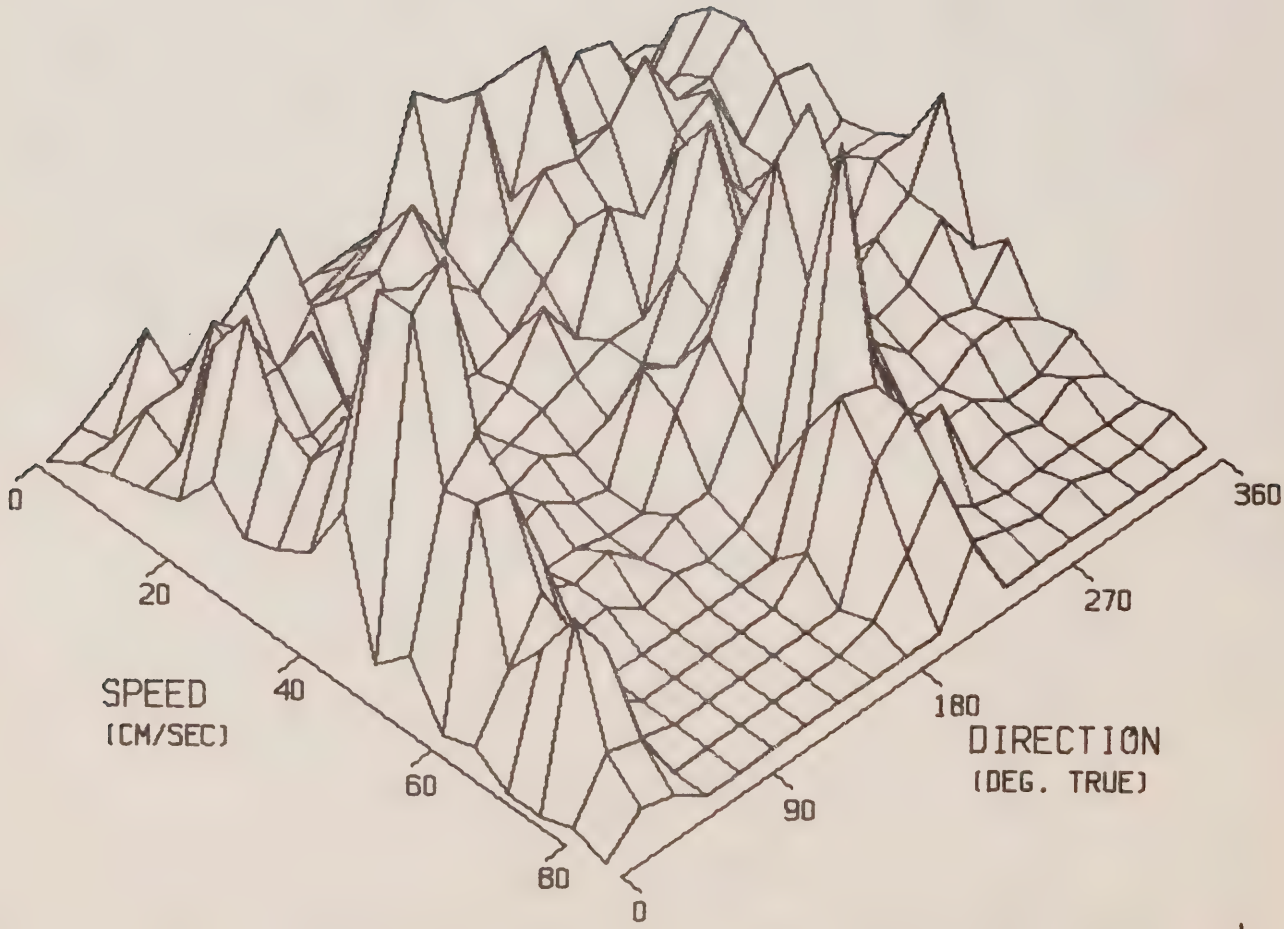
STN. NO. HS-4

DEPTH 2M.

STARTING DATE: 9/ 2/72 ENDING DATE: 29/ 2/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 2M.
STARTING DATE: 9/ 2/72
NO. OF SAMPLES = 1954



STN. NO. HS-4 DEPTH 2M.

STARTING DATE: 9/ 2/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	002	006	011	016	014	022	019	006	003	002			101
15- 29	004	008	018	022	018	034	029	027	015	019	004	005	203
30- 44	007	011	014	012	018	037	030	017	016	014	004	001	181
45- 59	004	016	011	005	006	017	036	020	005	002			122
60- 74	002	009	007	007	006	007	006	005	001				50
75- 89		010	016	008	002	003	007	002					48
90-104	003	016	006			001	002	001					29
105-119	003	013	003	002		003	001	003					28
120-134	001	006	003	002	004	002	001	001					20
135-149	002	012	006	004	002	002		001					29
150-164	002	010	010	001	003		001						27
165-179	002	020	004	008	004	003	002	001					44
180-194	002	024	009	007	005	006	008	002	007	004	001		75
195-209	001	018	011	005	006	012	014	007	019	013			106
210-224	004	012	012	013	007	011	029	024	023	022	006		163
225-239	005	021	020	012	022	018	031	039	019	008	003		198
240-254	003	014	008	005	012	016	016	021	005				100
255-269	004	009	009	008	009	009	007	011	008	002			76
270-284		012	026	014	013	009	011	005	002				92
285-299	003	010	010	011	005	006	003	001	002		001		52
300-314	003	015	011	007	006	005	002	004	001				54
315-329	001	007	009	010	004	009	004	002					46
330-344	004	009	011	007	004	011	009	003	001				59
345-359		006	016	005	006	016			001	001			51
	62		261		176		268		128		19		1954
		294		191		259		203		87		6	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 2M. START DATE 09/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	30 60 90 120 150
13	4	0	*
39	7	0	**
65	50	3	**********
91	104	5	**********
117	92	5	**********
143	91	5	**********
169	89	5	**********
195	97	5	**********
221	66	3	**********
247	72	4	**********
273	63	3	**********
299	58	3	**********
325	52	3	**********
351	56	3	**********
377	55	3	**********
403	81	4	**********
429	90	5	**********
455	86	4	**********
481	78	4	**********
507	92	5	**********
533	83	4	**********
559	91	5	**********
585	65	3	**********
611	63	3	**********
637	48	2	**********
663	45	2	**********
689	39	2	**********
715	35	2	**********
741	28	1	**********
767	31	2	**********
793	22	1	**********
819	6	0	**
845	7	0	**
871	4	0	*
897	0	0	
923	2	0	*
949	2	0	*
975	0	0	
1001	0	0	
1027	0	0	

NO. OF SAMPLES OVER 1040 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1954
SAMPLE INTERVAL = 15 MINUTES

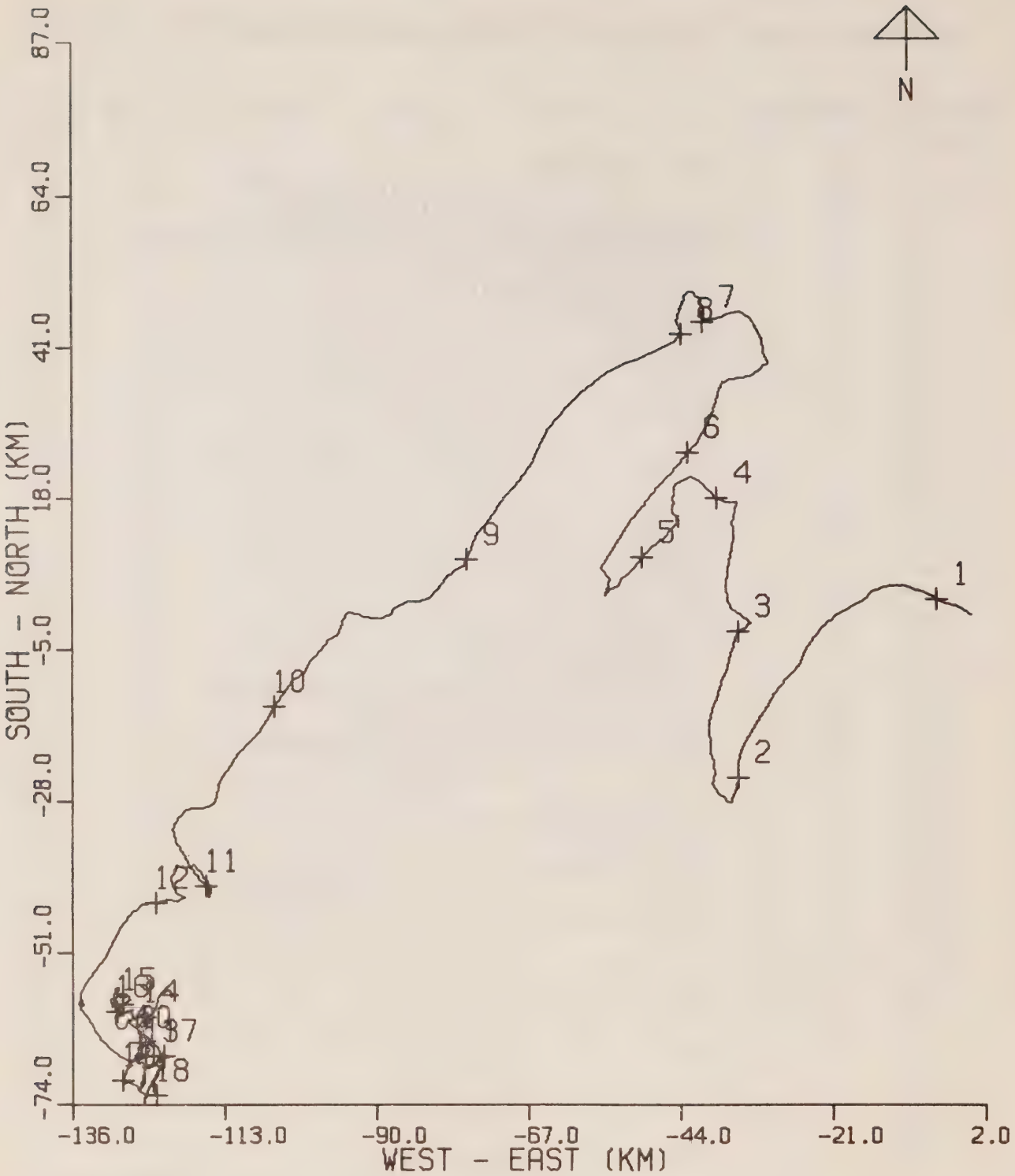
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 2M. START DATE 09/02/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 40 80 120 160 200
5	52	3	**********
15	126	6	**********
25	126	6	**********
35	153	8	**********
45	82	4	**********
55	68	3	**********
65	40	2	**********
75	30	2	**********
85	31	2	**********
95	15	1	**********
105	27	1	**********
115	12	1	**********
125	18	1	**********
135	8	0	**********
145	23	1	**********
155	24	1	**********
165	19	1	**********
175	39	2	**********
185	35	2	**********
195	64	3	**********
205	71	4	**********
215	133	7	**********
225	98	5	**********
235	130	7	**********
245	88	5	**********
255	42	2	**********
265	64	3	**********
275	42	2	**********
285	51	3	**********
295	33	2	**********
305	44	2	**********
315	25	1	**********
325	31	2	**********
335	49	3	**********
345	40	2	**********
355	21	1	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1954
SAMPLE INTERVAL = 15 MINUTES

DTA/C.O+RFJ:LIB O=*T*



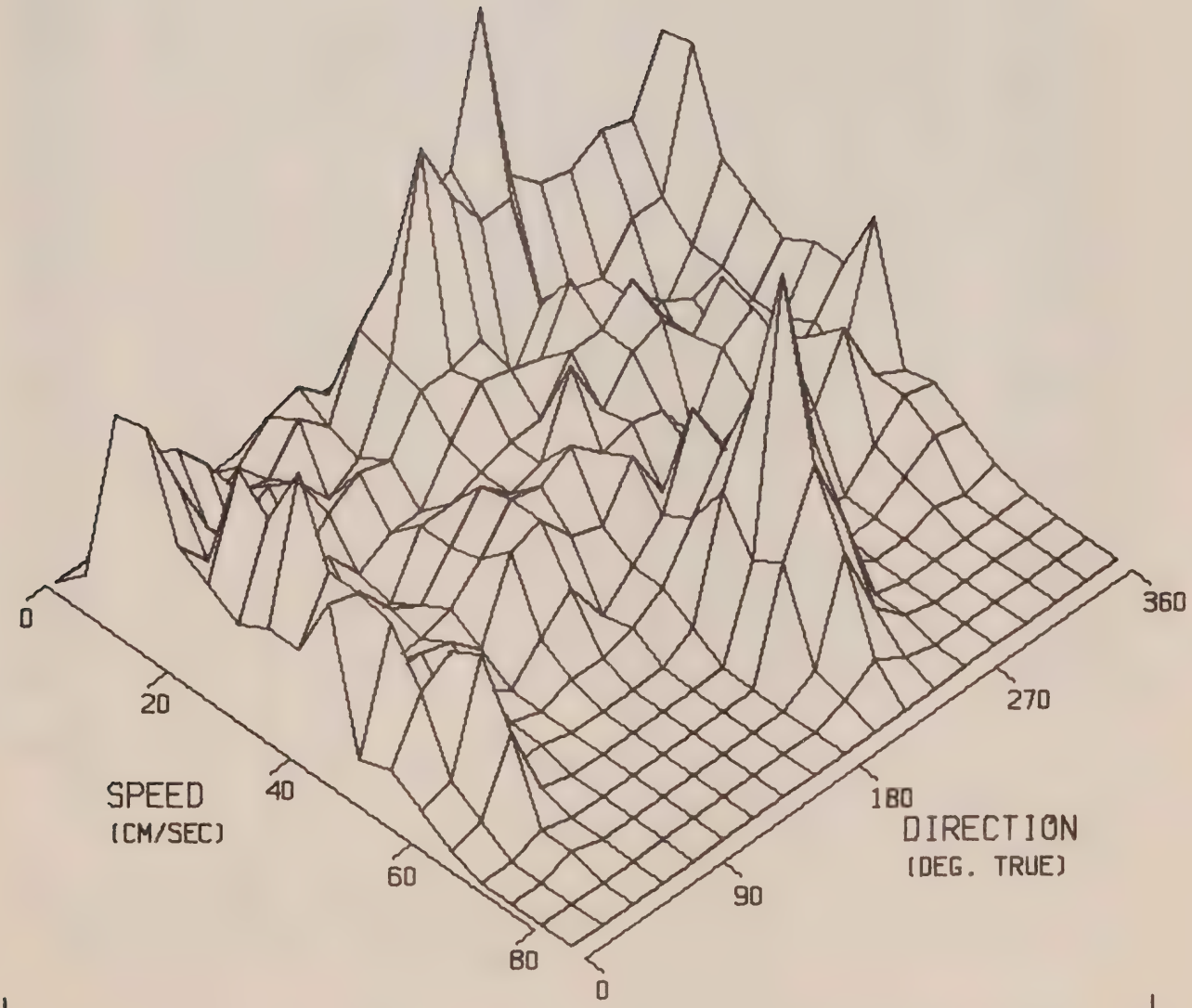
STN. NO. HS-4

DEPTH 2M

STARTING DATE: 29/ 2/72 ENDING DATE: 20/ 3/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 2M
STARTING DATE: 29/ 2/72
NO. OF SAMPLES = 1892



STN. NO. HS-4 DEPTH 2M

STARTING DATE:29/ 2/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	002	034	013	016	019	022	014	006					126
15- 29	001	019	012	023	028	020	015	002	002				122
30- 44	001	012	010	014	009	008	009	019	005	001			88
45- 59	003	015	002	008	010	007	002	005	002				54
60- 74	001	007	007	003	005	003	002						28
75- 89		006	004	003	004	007	001	001					26
90-104	003	007	007		004	002		001					24
105-119	002	007	005	002	005	006	002						29
120-134	008	005	007	005	006	011	002						44
135-149	006	005	008	004	017	018	005	001					64
150-164	004	010	010	010	007	011	001	001					54
165-179	003	023	017	012	008	005	002	001					71
180-194	004	041	020	009	016	011	007	004	002	001			115
195-209	008	029	014	009	017	014	009	019	016	002			137
210-224	008	024	014	012	017	009	017	030	033	011	001		176
225-239	009	040	011	014	011	007	016	013	030	010	001		162
240-254	005	022	015	013	014	007	005	024	005	001			111
255-269	002	015	006	017	014	005	005	006	001				71
270-284	007	015	006	010	020	010	003	002					73
285-299	003	013	009	004	013	014	007						63
300-314	003	012	003	004	009	012	005						48
315-329	007	021	002	006	004	012	013	003					68
330-344	004	012	007	006	002	010	006	007					54
345-359	004	024	015	013	011	008	003	005					83
	98	418	224	217	270	239	151	150	96	26	2	0	1891

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 29/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
10	3	0	*
30	13	1	***
50	33	2	********
70	52	3	************
90	89	5	**********************
110	135	7	**********************************
130	122	6	********************************
150	73	4	*******************
170	66	3	*****************
190	59	3	***************
210	38	2	**********
230	59	3	***************
250	58	3	***************
270	51	3	*************
290	56	3	**************
310	55	3	**************
330	75	4	********************
350	67	4	*****************
370	70	4	******************
390	55	3	**************
410	62	3	****************
430	53	3	*************
450	60	3	****************
470	63	3	****************
490	46	2	************
510	39	2	**********
530	39	2	**********
550	26	1	*******
570	37	2	*********
590	45	2	***********
610	40	2	**********
630	28	1	*******
650	34	2	*********
670	28	1	*******
690	22	1	******
710	12	1	***
730	11	1	***
750	8	0	**
770	6	0	**
790	1	0	

NO. OF SAMPLES OVER 800 = 3
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1892
SAMPLE INTERVAL = 15 MINUTES

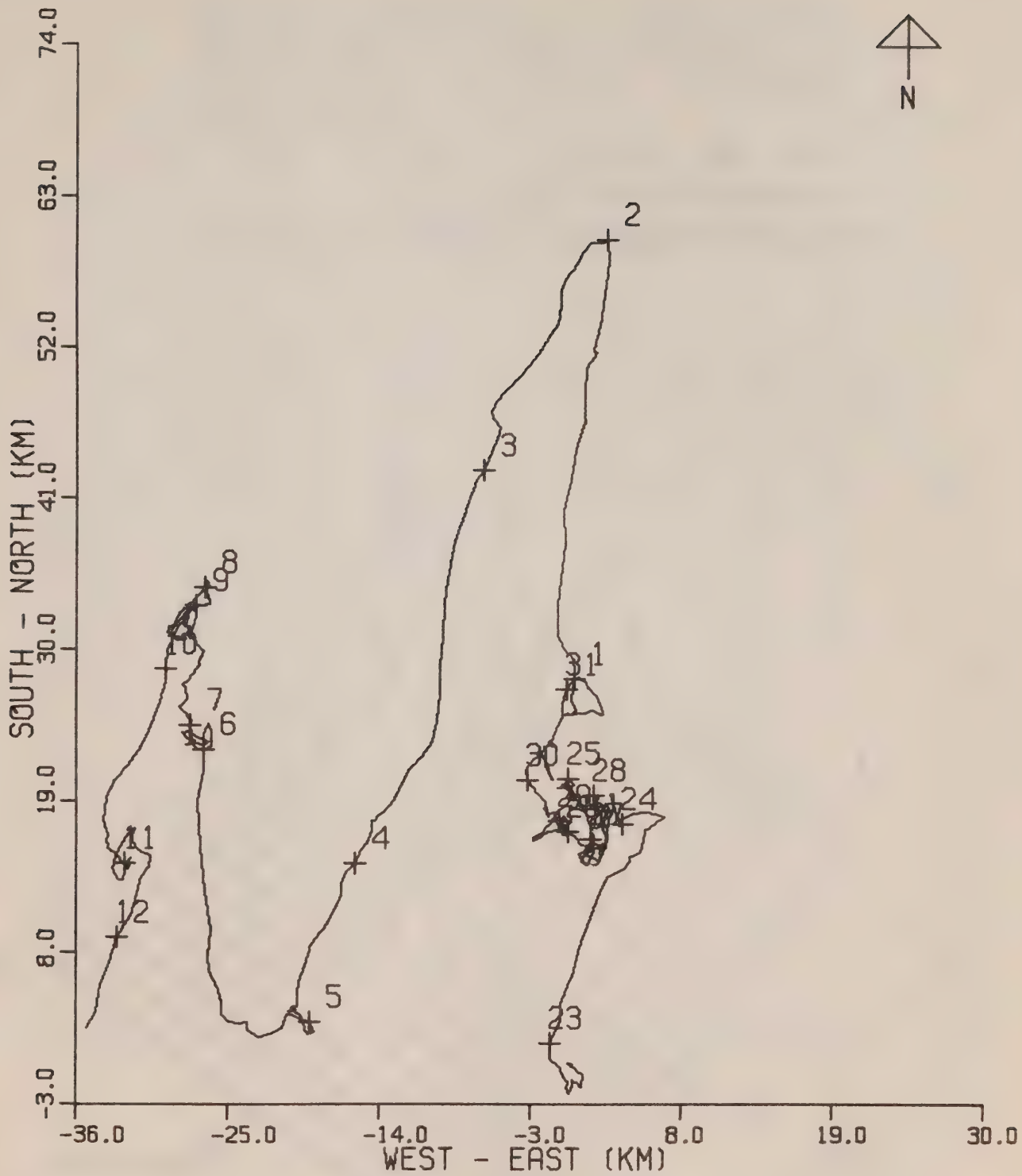
HISTOGRAM OF DIRECTION

HOWE SOUND HS=4 DEPTH 2M. START DATE 29/02/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	75	4	**********
15	96	5	**********
25	77	4	**********
35	76	4	**********
45	38	2	**********
55	28	1	*********
65	22	1	*******
75	21	1	*******
85	16	1	*****
95	13	1	****
105	14	1	*****
115	21	1	*******
125	38	2	**********
135	30	2	**********
145	40	2	**********
155	43	2	**********
165	39	2	**********
175	67	4	**********
185	54	3	**********
195	84	4	**********
205	90	5	**********
215	143	8	**********
225	87	5	**********
235	109	6	**********
245	99	5	**********
255	40	2	**********
265	55	3	**********
275	39	2	**********
285	44	2	**********
295	41	2	**********
305	40	2	**********
315	28	1	*********
325	48	3	**********
335	45	2	**********
345	33	2	**********
355	59	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1892
SAMPLE INTERVAL = 15 MINUTES

)TA/C.O+REJ:LIB O=*T*



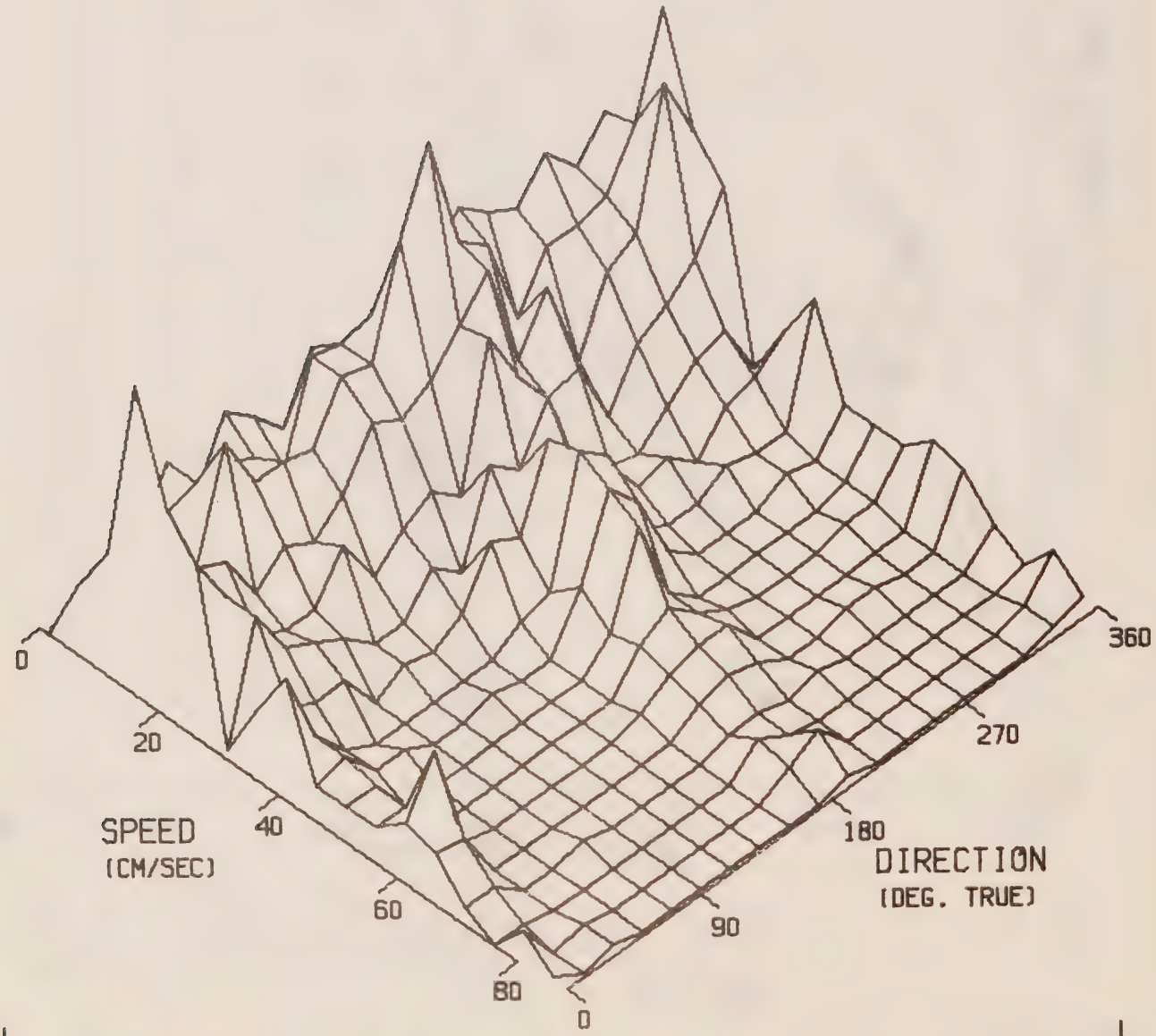
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 22/ 3/72 ENDING DATE: 12/ 4/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 22/ 3/72
NO. OF SAMPLES = 1995



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE:22/ 3/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	011	033	036	014	016	010	007	016	009	002	002		156
15- 29	009	022	018	014	011	006	005	013	002				100
30- 44	005	016	014	006	004	003		001		001	001		51
45- 59	015	033	013	011	007	002							81
60- 74	008	015	010	007	001								41
75- 89	011	018	010	007									46
90-104	017	026	012	011	002					001			69
105-119	009	008	011	005	001	001							35
120-134	015	019	017	003	002								56
135-149	010	027	028	006	003								74
150-164	013	026	013	001	006								59
165-179	013	025	025	013	008	004	002	001	001	001			93
180-194	012	047	026	018	015	010	009	005	002	007	003		154
195-209	015	032	027	020	018	019	011	005	002	002			151
210-224	006	021	033	019	014	019	004	005					121
225-239	013	035	022	016	007	005	003	001	001				103
240-254	012	025	010	007	004	002							60
255-269	007	026	018	009	003								63
270-284	009	029	014	002	002								56
285-299	007	026	011	004	005	001			001				55
300-314	007	027	019	009	003	001			001				67
315-329	011	030	024	013	007	001	001						87
330-344	016	024	030	016	004	001	001						92
345-359	007	024	039	013	010	005	003	004	002	001	006	003	117
	258	614	480	244	153	90	46	51	21	15	12	3	1987

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 8

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 22/03/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
11	18	1	****
33	69	3	**********
55	99	5	**********
77	117	6	**********
99	167	8	**********
121	166	8	**********
143	193	10	**********
165	170	9	**********
187	161	8	**********
209	105	5	**********
231	102	5	**********
253	98	5	**********
275	52	3	**********
297	54	3	**********
319	54	3	**********
341	50	3	**********
363	36	2	*******
385	37	2	*******
407	24	1	*****
429	33	2	*******
451	17	1	***
473	20	1	****
495	11	1	**
517	17	1	***
539	9	0	**
561	12	1	**
583	18	1	****
605	13	1	***
627	13	1	***
649	10	1	**
671	6	0	*
693	3	0	*
715	6	0	*
737	4	0	*
759	1	0	
781	5	0	*
803	8	0	**
825	1	0	
847	3	0	*
869	2	0	

NO. OF SAMPLES OVER 880 = 11
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1995
SAMPLE INTERVAL = 15 MINUTES

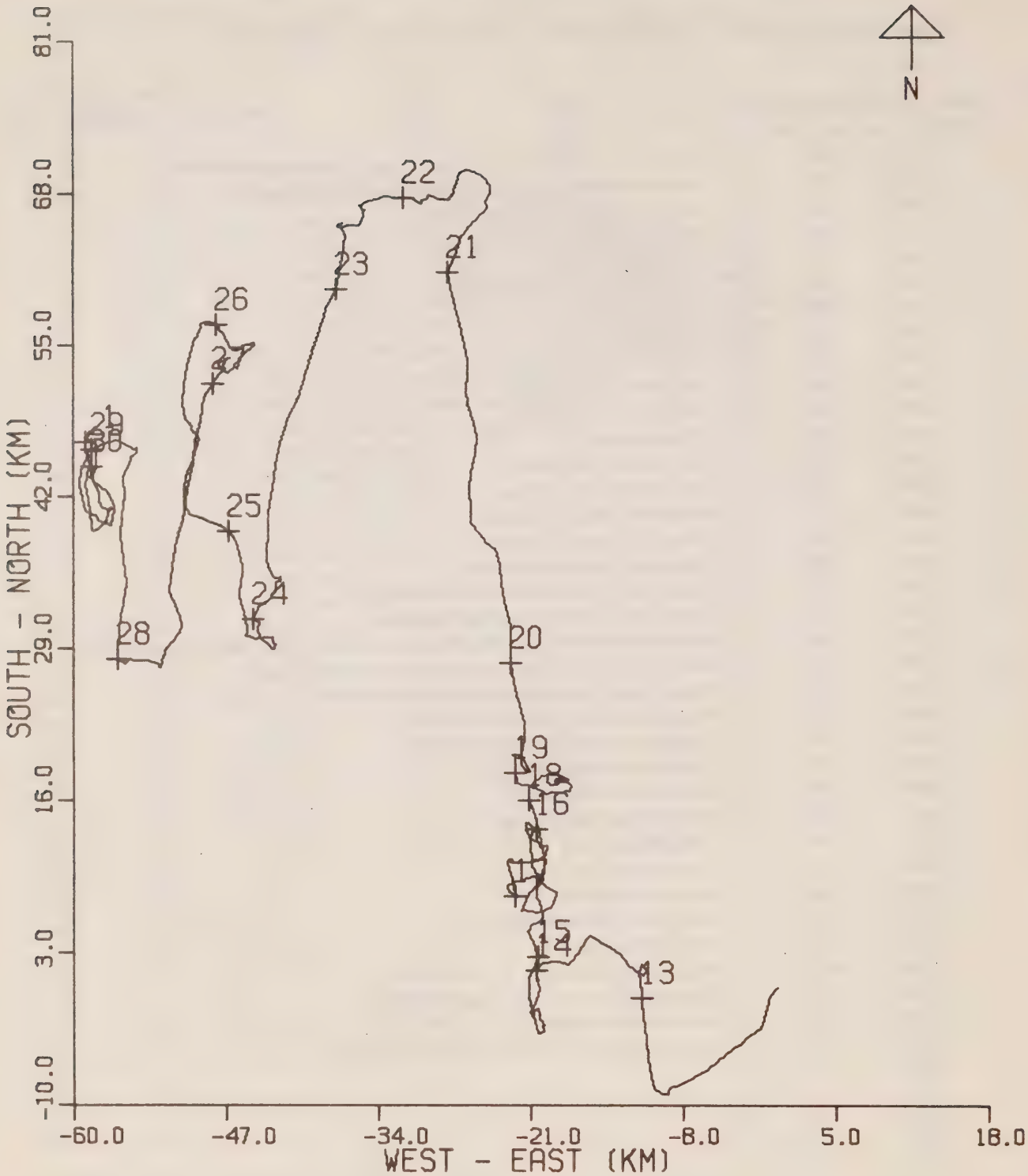
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 22/03/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	106	5	**********
15	94	5	**********
25	56	3	**********
35	44	2	**********
45	33	2	**********
55	56	3	**********
65	28	1	**********
75	31	2	**********
85	37	2	**********
95	39	2	**********
105	35	2	**********
115	23	1	**********
125	42	2	**********
135	41	2	**********
145	47	2	**********
155	49	2	**********
165	49	2	**********
175	73	4	**********
185	67	3	**********
195	126	6	**********
205	93	5	**********
215	100	5	**********
225	63	3	**********
235	61	3	**********
245	47	2	**********
255	39	2	**********
265	45	2	**********
275	29	1	**********
285	40	2	**********
295	34	2	**********
305	55	3	**********
315	33	2	**********
325	67	3	**********
335	71	4	**********
345	68	3	**********
355	74	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1995
SAMPLE INTERVAL = 15 MINUTES

DTA/C.0+REJ;LIB 0=*T*



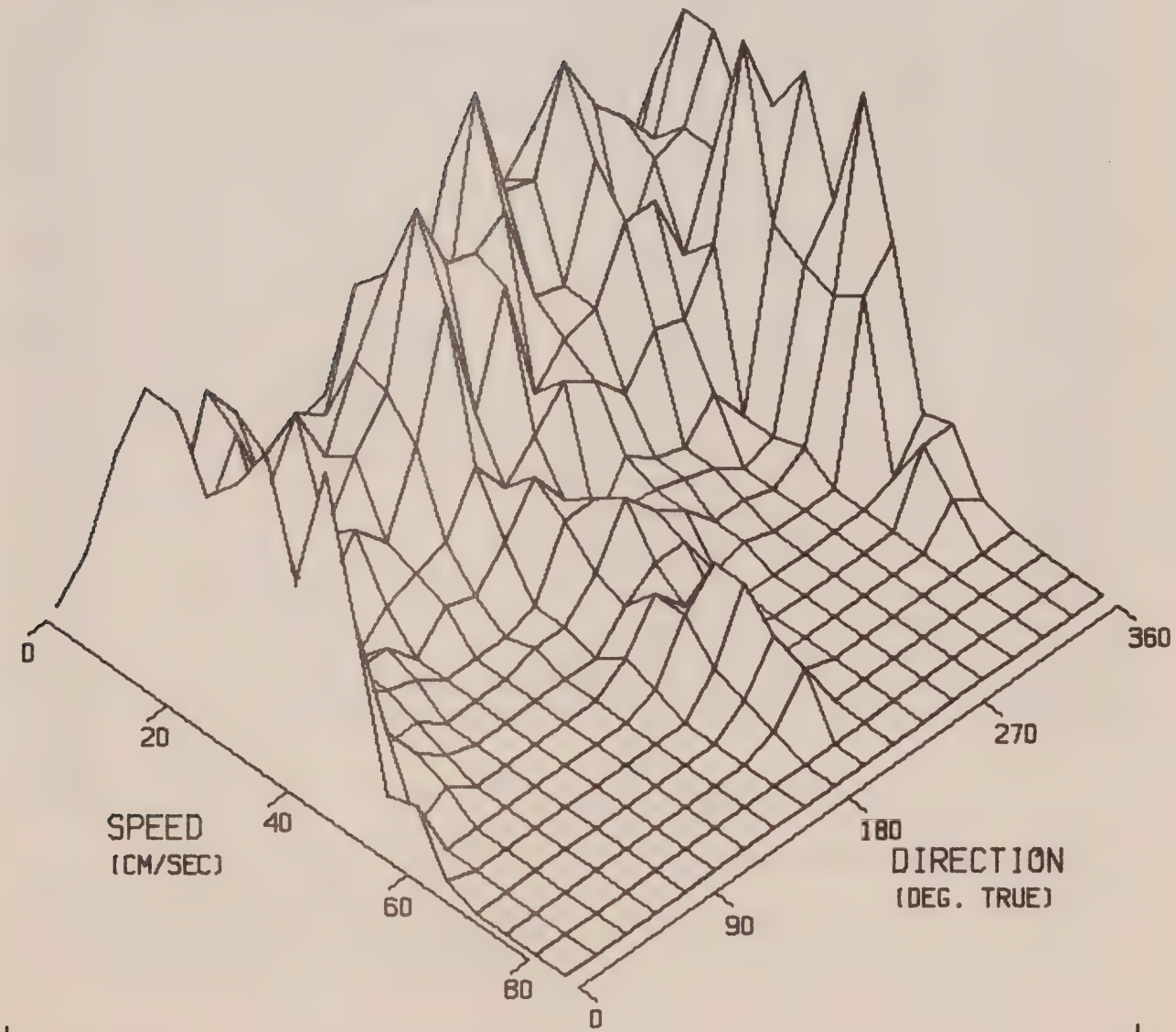
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 12/ 4/72 ENDING DATE: 1/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 12/ 4/72
NO. OF SAMPLES = 1842



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE:12/ 4/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	007	028	027	029	039	028	014	003					175
15- 29	006	013	018	009	007	006	003						62
30- 44	005	011	010	015	010	005	005						61
45- 59	002	014	013	002	002	003							36
60- 74	006	020	010	002	005	001							44
75- 89	002	016	004	001	002	001							26
90-104	002	022	009	008	001								42
105-119	004	010	006	007	002								29
120-134	002	011	016	007	002	001							39
135-149	007	011	021	011	003								53
150-164	005	022	035	019	006	001		001					89
165-179	007	017	029	006	003	003	002	004		002			73
180-194	003	014	027	016	011	010	005	010	011	003		001	111
195-209	006	020	024	013	007	009	006	007	007	002		001	102
210-224	008	031	029	014	003	005	003	001	001				95
225-239	004	031	016	010	005	005	001						72
240-254	009	022	022	012	007	003							75
255-269	011	019	012	012	003	002	001						60
270-284	009	038	024	019	003	002							95
285-299	002	026	033	022	006								89
300-314	007	017	017	017	001								59
315-329	007	017	027	020	003	002							76
330-344	005	010	019	031	019	010	005	002					101
345-359	006	023	031	027	026	031	022	010	002				178
	132		479		176		67		21		0		1842
		463		329		128		38		7		2	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 12/04/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
10	14	1	****
30	21	1	*****
50	33	2	********
70	67	4	******************
90	86	5	************************
110	120	7	**********************************
130	132	7	**********************************
150	129	7	**********************************
170	142	8	**************************************
190	135	7	**********************************
210	104	6	****************************
230	100	5	****************************
250	92	5	************************
270	87	5	************************
290	70	4	******************
310	76	4	********************
330	44	2	**********
350	41	2	**********
370	44	2	**********
390	45	2	**********
410	23	1	******
430	36	2	*********
450	36	2	*********
470	33	2	********
490	27	1	*******
510	18	1	*****
530	11	1	***
550	9	0	**
570	13	1	***
590	12	1	***
610	6	0	**
630	6	0	**
650	7	0	**
670	7	0	**
690	6	0	**
710	1	0	
730	3	0	*
750	3	0	*
770	1	0	
790	0	0	

NO. OF SAMPLES OVER 800 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1842
SAMPLE INTERVAL = 15 MINUTES

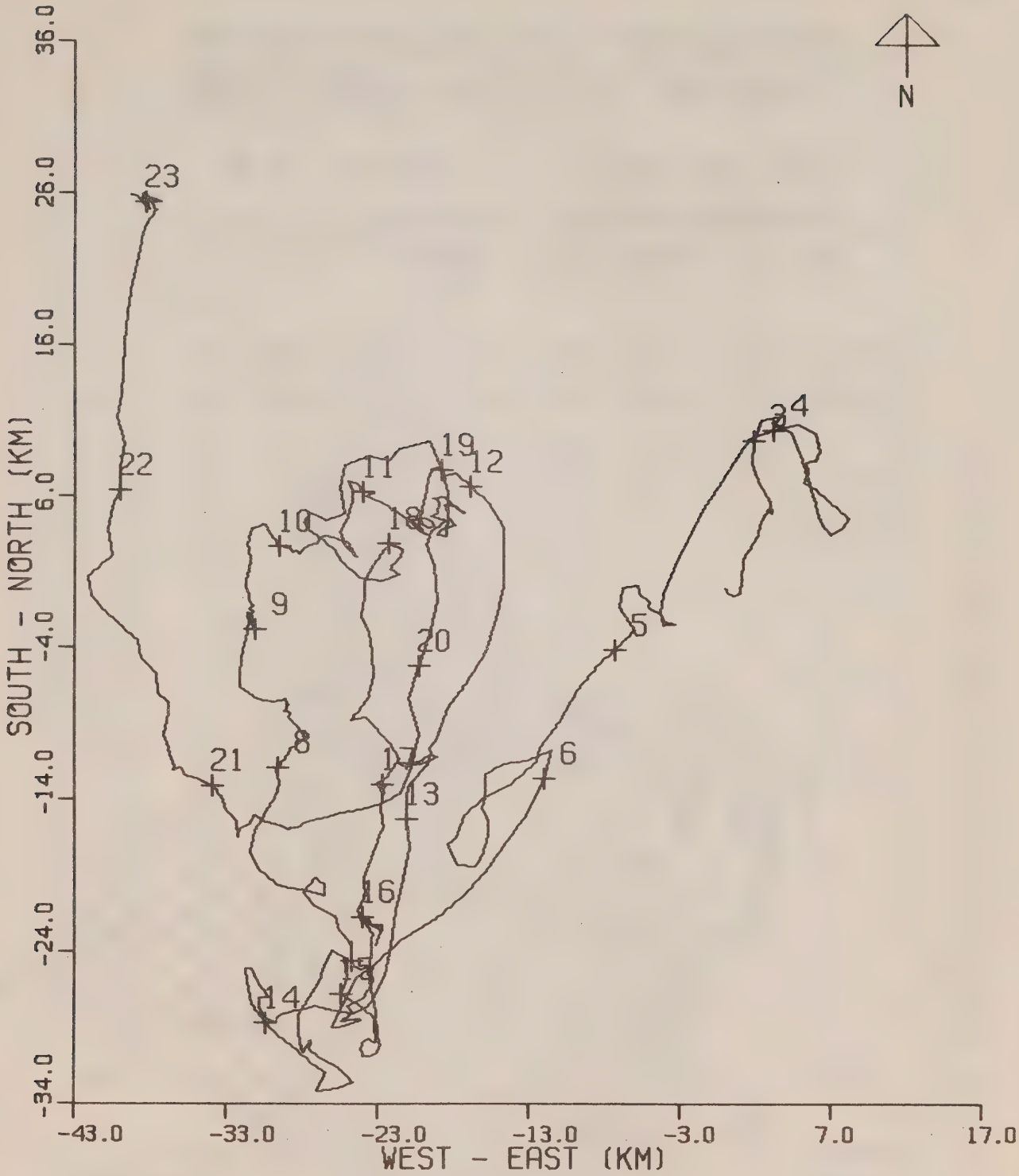
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 12/04/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	132	7	**********
15	75	4	**********
25	30	2	**********
35	52	3	**********
45	18	1	**********
55	27	1	**********
65	37	2	**********
75	19	1	**********
85	21	1	**********
95	18	1	**********
105	26	1	**********
115	20	1	**********
125	26	1	**********
135	30	2	**********
145	36	2	**********
155	71	4	**********
165	50	3	**********
175	53	3	**********
185	58	3	**********
195	86	5	**********
205	57	3	**********
215	76	4	**********
225	50	3	**********
235	41	2	**********
245	57	3	**********
255	42	2	**********
265	51	3	**********
275	43	2	**********
285	75	4	**********
295	51	3	**********
305	44	2	**********
315	33	2	**********
325	58	3	**********
335	66	4	**********
345	108	6	**********
355	105	6	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1842
SAMPLE INTERVAL = 15 MINUTES

$R DTA/C.O+REJ;LIB O=*T*



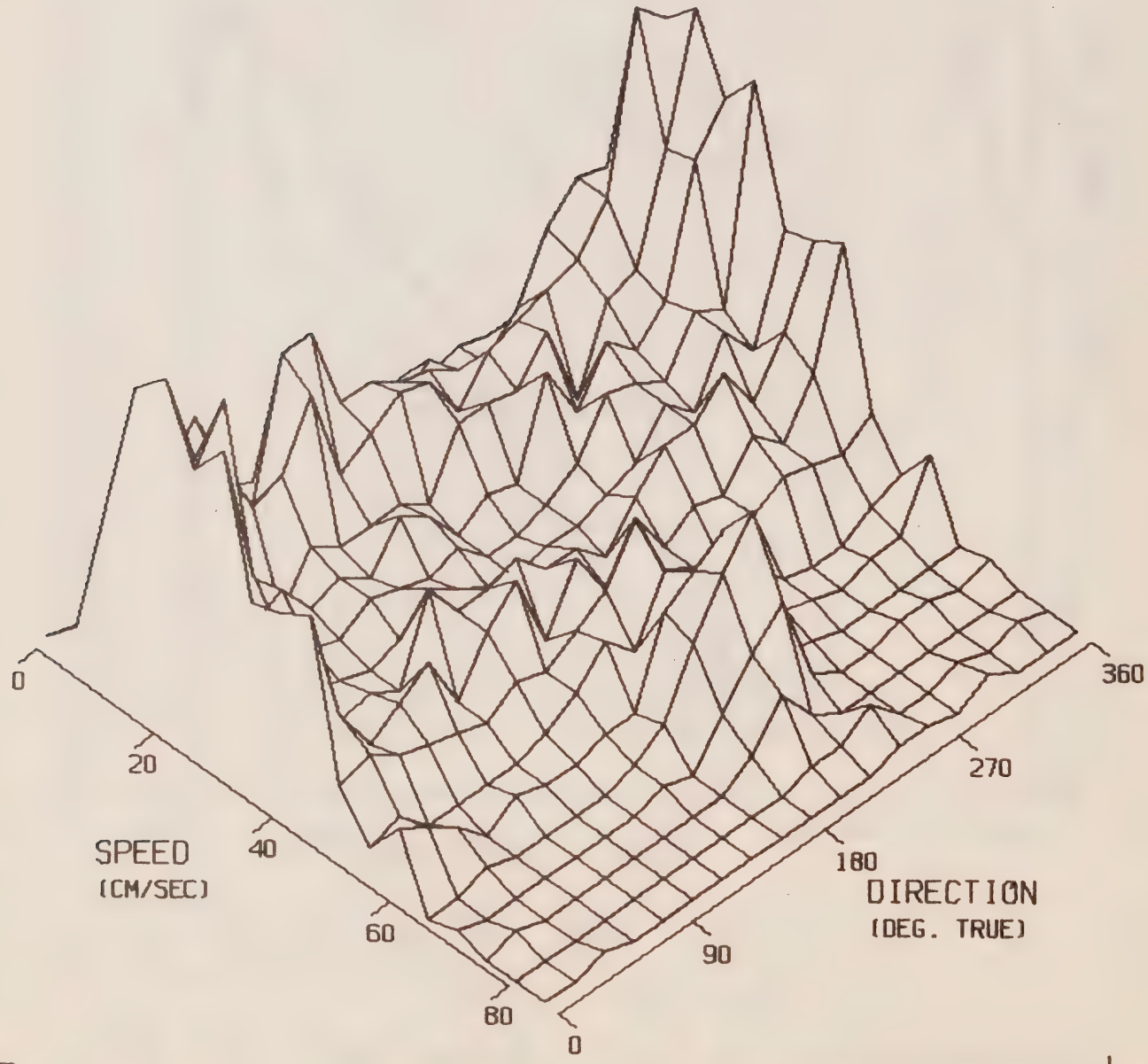
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 2/ 5/72 ENDING DATE: 23/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 2/ 5/72
NO. OF SAMPLES = 1997



STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 2/ 5/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	004	021	056	039	029	021	008	011	001	001			191
15- 29	003	018	030	020	013	010	007	002				002	105
30- 44	003	023	027	007	005	006	005	004				001	81
45- 59	007	020	014	007	011	008	005	001			001	001	75
60- 74	008	011	010	006	004	004	002						45
75- 89	006	016	010	004	007	011	002	002					58
90-104	008	012	007	007	011	008	001	001					55
105-119	012	021	009	008	008	008	001	002					69
120-134	003	021	011	007	007	011	005	001					66
135-149	006	023	010	009	011	013	005	005	001		001	001	85
150-164	006	015	009	006	005	010	008	003	003				65
165-179	009	012	006	004	002	011	004	006	003	001			58
180-194	003	020	005	005	008	007	009	016	013	002			88
195-209	005	013	014	005	003	008	017	010	013	007			95
210-224	002	010	007	007	002	010	010	016	017	003			84
225-239	004	009	012	006	006	007	009	007	010	002			72
240-254	006	008	013	010	008	003	004	005			002		59
255-269	002	010	008	012	007	013	002	003			001		58
270-284	003	015	011	013	012	007	005	001					67
285-299	003	017	013	008	009	012	005	001	001				69
300-314	004	019	014	009	014	011	005			001	002		79
315-329	008	027	021	017	012	011	004	001	001				102
330-344	006	031	024	016	011	015	003	001			001		108
345-359	006	028	040	032	015	016	006	002					145
	127	420	381	264	220	241	132	101	63	17	8	5	1979

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 18

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M START DATE 02/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 40 80 120 160 200
13	15	1	****
39	40	2	**********
65	69	3	******************
91	108	5	*****************************
117	140	7	**************************************
143	159	8	**
169	141	7	**************************************
195	107	5	*****************************
221	125	6	**********************************
247	92	5	************************
273	100	5	***************************
299	78	4	*********************
325	75	4	********************
351	59	3	****************
377	70	4	******************
403	88	4	************************
429	91	5	*************************
455	67	3	******************
481	60	3	****************
507	51	3	**************
533	34	2	*********
559	34	2	*********
585	42	2	***********
611	26	1	*******
637	23	1	******
663	27	1	*******
689	17	1	****
715	12	1	***
741	2	0	*
767	9	0	**
793	6	0	**
819	2	0	*
845	3	0	*
871	2	0	*
897	1	0	
923	1	0	
949	4	0	*
975	2	0	*
1001	2	0	*
1027	0	0	

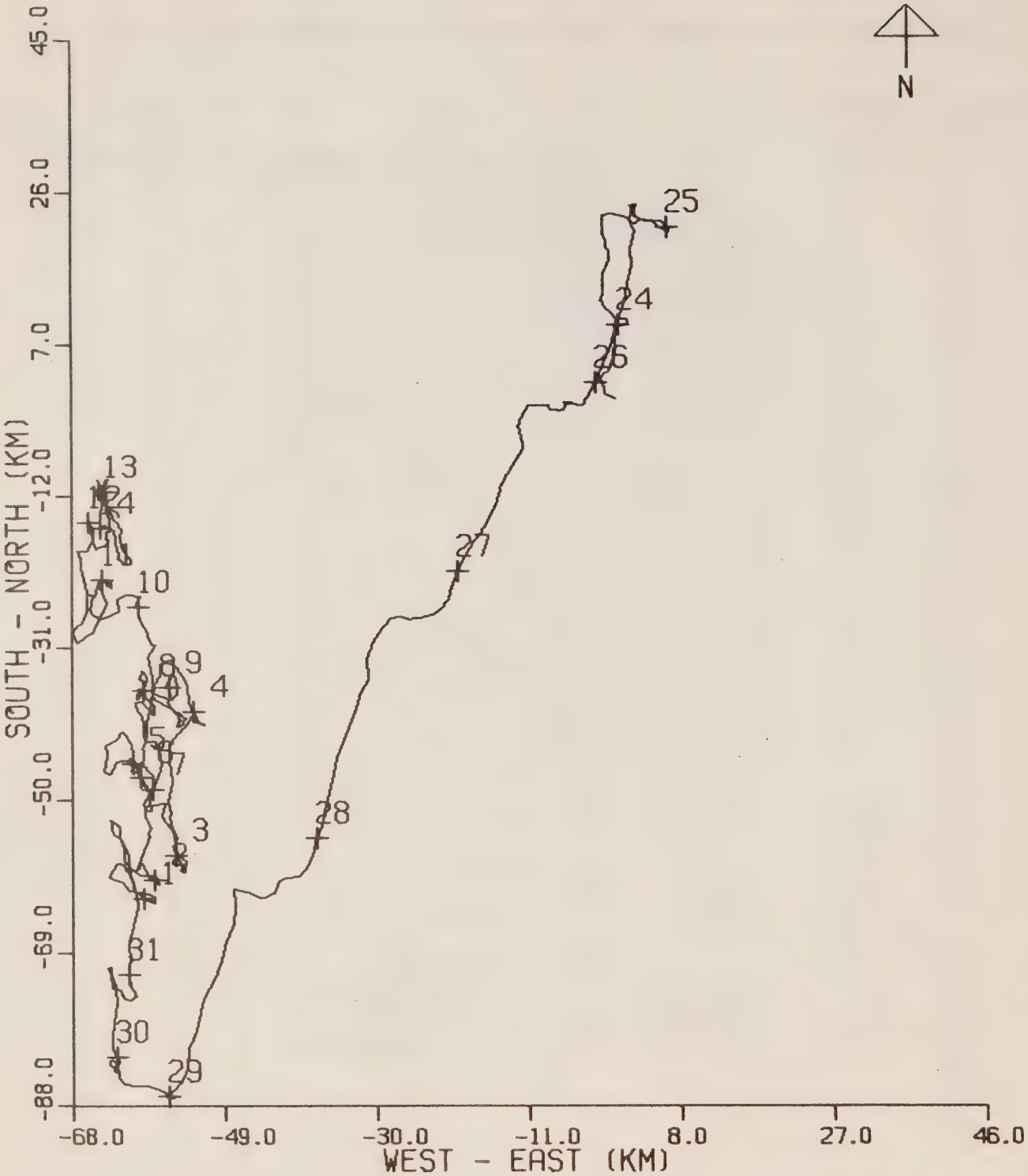
NO. OF SAMPLES OVER 1040 = 13
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1997
SAMPLE INTERVAL = 15 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M START DATE 02/05/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	30 60 90 120 150
5	138	7	**********
15	101	5	********
25	59	3	*****
35	65	3	******
45	40	2	***
55	53	3	*****
65	40	2	***
75	32	2	***
85	40	2	***
95	33	2	***
105	47	2	****
115	40	2	***
125	58	3	*****
135	41	2	****
145	54	3	*****
155	53	3	*****
165	33	2	***
175	49	2	****
185	46	2	****
195	64	3	******
205	61	3	******
215	66	3	******
225	45	2	****
235	46	2	****
245	49	2	****
255	34	2	***
265	50	3	*****
275	24	1	**
285	58	3	*****
295	40	2	***
305	63	3	******
315	45	2	****
325	75	4	*******
335	87	4	********
345	76	4	*******
355	92	5	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1997
SAMPLE INTERVAL = 15 MINUTES



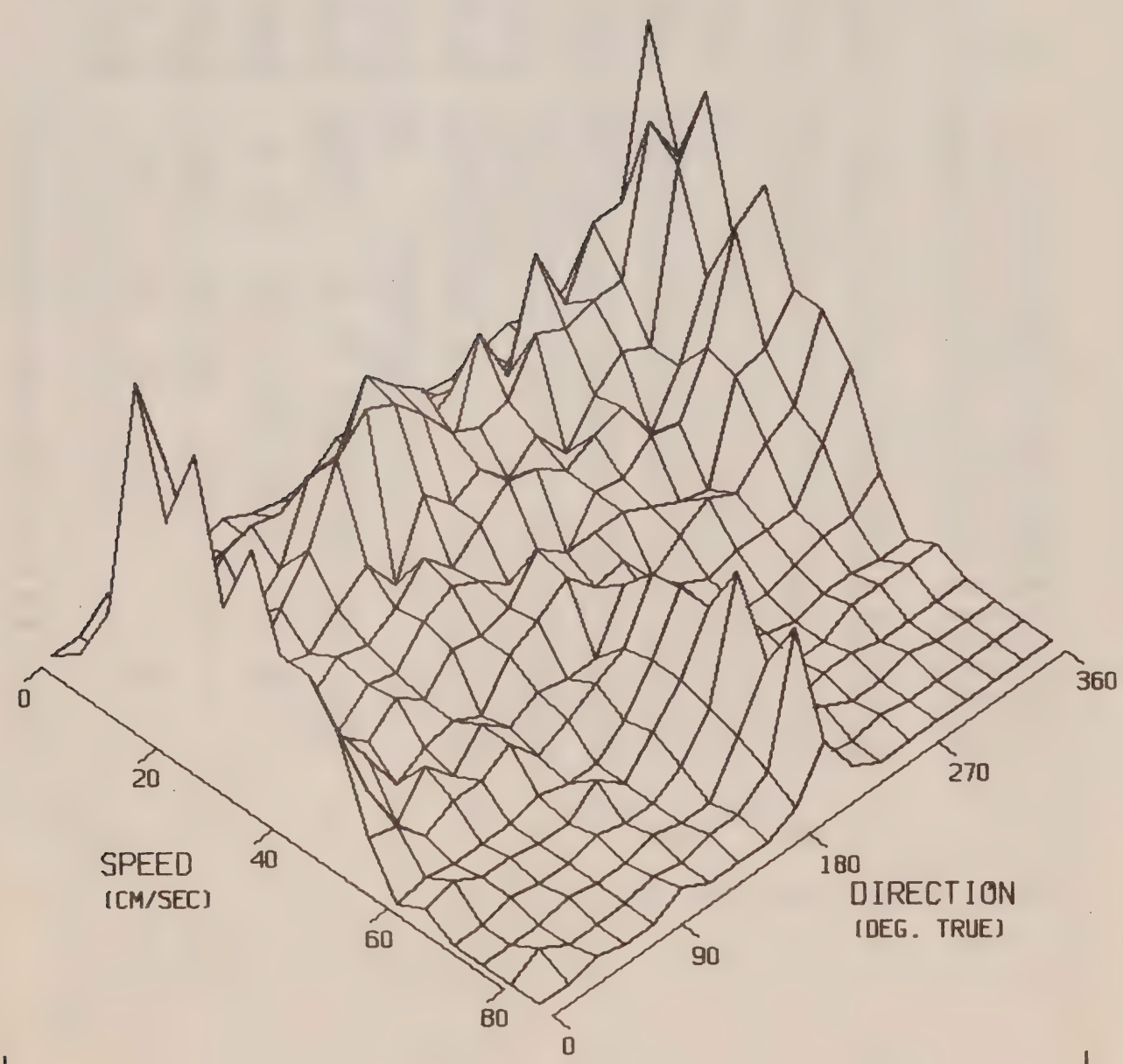
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 23/ 5/72 ENDING DATE: 14/ 6/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 23/ 5/72
NO. OF SAMPLES = 2152



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE:23/ 5/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	007	031	043	026	039	021	016	002	001				186
15- 29	001	027	020	006	011	011	007	001	002	001	002		89
30- 44	006	015	007	010	011	008	001		001		001	001	61
45- 59	006	008	006	005	003	003	003		001	001			36
60- 74	005	003	002	002		001	004	002					19
75- 89	003	009	008	006	006	003	002	002					39
90-104	006	007	014	008	007	006	005	004	001	001	001	001	61
105-119	007	011	019	009	007	002	002	001		001	001		60
120-134	003	015	019	008	008	005	003	001	001				63
135-149	003	015	031	012	012	007	005	002			001	001	89
150-164	002	015	024	011	010	007	003	004	002	001			79
165-179	001	015	027	011	008	014	004	007	004	002			93
180-194	004	016	031	016	004	012	008	018	014	011	005	002	141
195-209	002	011	017	011	007	015	015	016	026	022	015	003	160
210-224	003	005	017	009	006	010	005	005	002	004	002	001	69
225-239	004	010	015	016	014	005	006	004	002	003			79
240-254	003	015	013	007	007	005	005	001					56
255-269	002	006	020	010	008	008		001	001				56
270-284	001	016	027	017	012	009	005		001	001			89
285-299	003	016	019	013	011	005	005						72
300-314	002	016	017	009	010	005	003	001	002	001		001	67
315-329	003	021	027	017	022	021	004	003	001				119
330-344	003	014	042	025	027	009	008		002				130
345-359	003	028	046	035	037	025	014						188
	83		511		287		133		64		28		2101
		345		299		217		75		49		10	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 51

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M START DATE 23/05/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
13	18	1	*****
39	18	1	*****
65	41	2	**********
91	83	4	**********
117	91	4	**********
143	152	7	**********
169	204	9	**********
195	140	7	**********
221	162	8	**********
247	101	5	**********
273	103	5	**********
299	100	5	**********
325	90	4	**********
351	94	4	**********
377	97	5	**********
403	86	4	**********
429	69	3	**********
455	70	3	**********
481	64	3	**********
507	38	2	**********
533	34	2	**********
559	37	2	**********
585	22	1	******
611	19	1	*****
637	23	1	******
663	23	1	******
689	22	1	******
715	16	1	****
741	16	1	****
767	13	1	***
793	18	1	*****
819	15	1	****
845	8	0	**
871	6	0	**
897	2	0	*
923	3	0	*
949	3	0	*
975	6	0	**
1001	2	0	*
1027	3	0	*

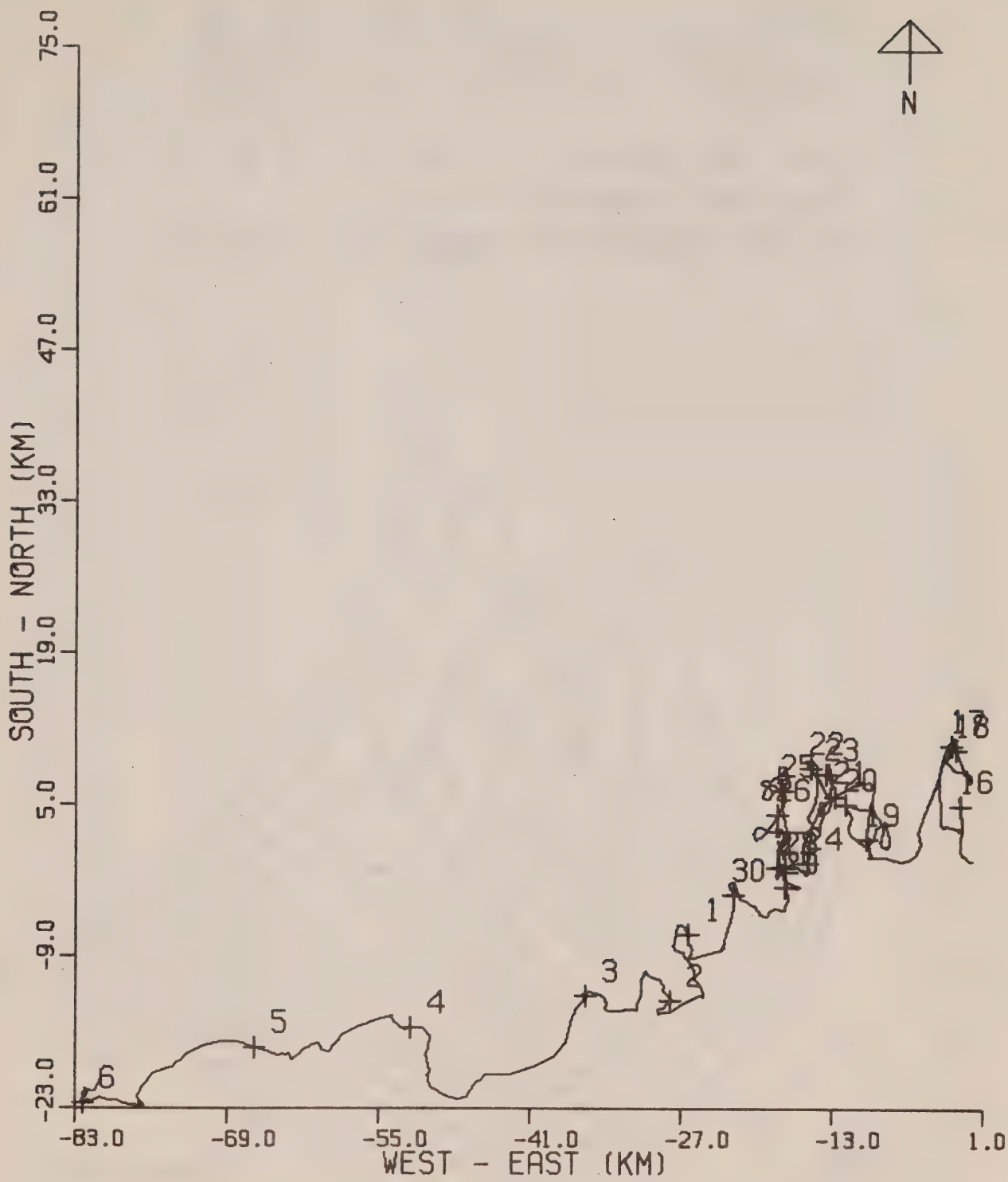
NO. OF SAMPLES OVER 1040 = 40
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2152
SAMPLE INTERVAL = 15 MINUTES
TOC4 RELEASED.

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M START DATE 23/05/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	30 60 90 120 150
5	142	7	**********
15	98	5	*******
25	42	2	***
35	55	3	****
45	21	1	**
55	26	1	**
65	17	1	*
75	23	1	**
85	33	2	***
95	29	1	**
105	45	2	***
115	42	2	***
125	51	2	****
135	37	2	***
145	69	3	*****
155	63	3	*****
165	61	3	*****
175	70	3	*****
185	74	3	*****
195	108	5	********
205	104	5	********
215	56	3	****
225	37	2	***
235	56	3	****
245	46	2	***
255	33	2	***
265	50	2	****
275	45	2	***
285	57	3	****
295	44	2	***
305	54	3	****
315	50	2	****
325	88	4	******
335	102	5	********
345	103	5	********
355	121	6	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2152
SAMPLE INTERVAL = 15 MINUTES
0 RELEASED.



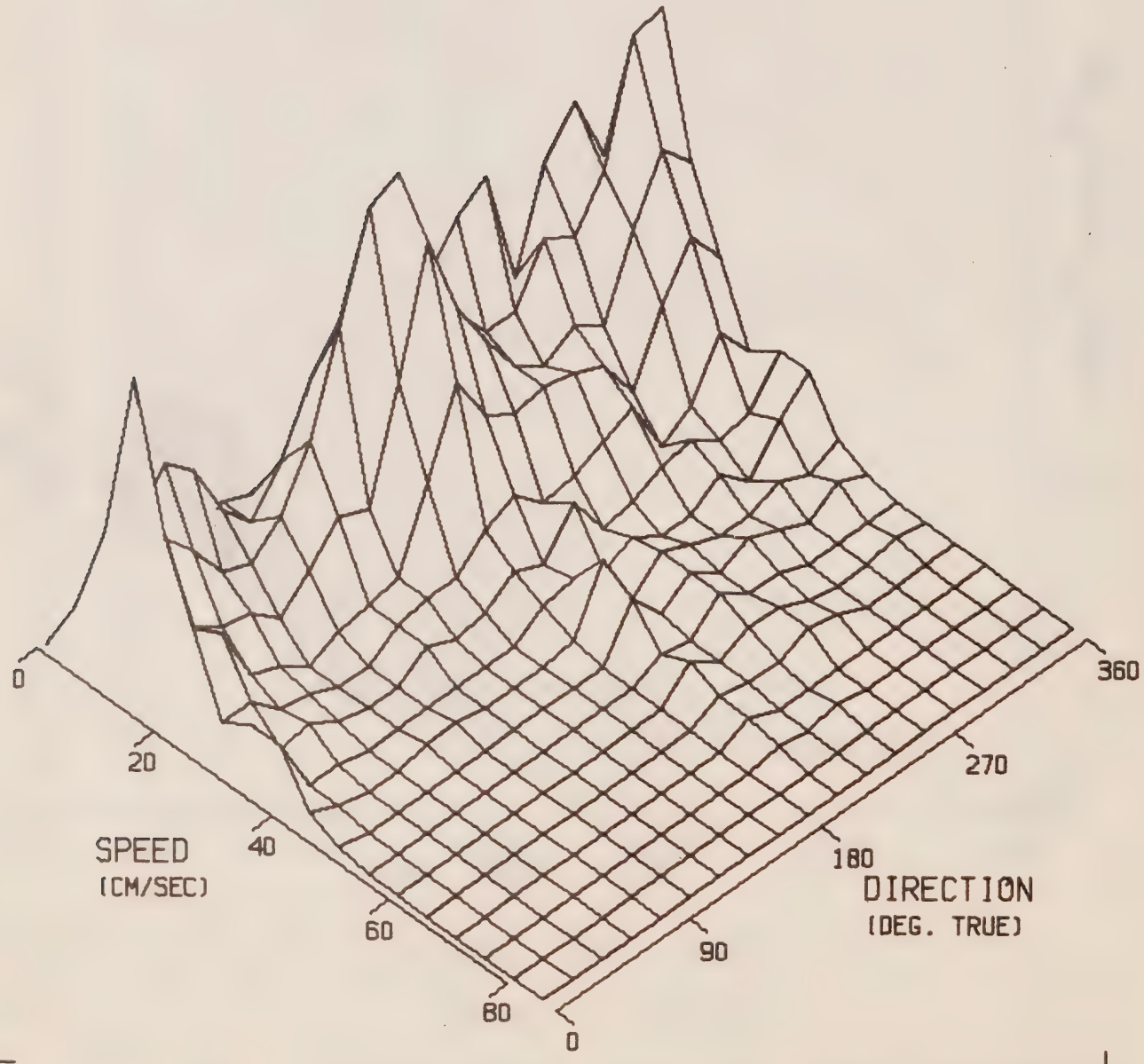
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 15/ 6/72 ENDING DATE: 6/ 7/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 15/ 6/72
NO. OF SAMPLES = 1994



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE:15/ 6/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	010	043	038	014	009	003	001						118
15- 29	003	025	016	009	003	002							58
30- 44	008	031	010	003	004								56
45- 59	007	027	013	004	001								52
60- 74	008	013	005	001	001								28
75- 89	008	015	004										27
90-104	009	011	009	002		002							33
105-119	006	020	013	001									40
120-134	007	021	017	005	003								53
135-149	010	039	020	005	002								76
150-164	003	051	027	006	001								88
165-179	006	052	044	017	005								124
180-194	017	037	055	024	004	005	002	002	002	001			149
195-209	013	033	028	017	004	011	006	002	002				116
210-224	009	030	025	013	009	001	003	001					91
225-239	018	026	025	009	006	004	006	002	001	001			98
240-254	009	031	018	011	003	003	002	005	001				83
255-269	007	033	019	013	004	002	003	003	001				85
270-284	012	043	023	017	005	001	005	002	002				110
285-299	013	026	019	010	005	002	002	001					78
300-314	008	034	018	002	005	003							70
315-329	010	050	037	015	003	002							117
330-344	010	043	037	017	005	005	002						119
345-359	008	036	049	016	011	004		001					125
	219		569		93		32		9		0		1994
		770		231		50		19		2		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 15/06/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60 120 180 240 300
9	6	0	*
27	27	1	*****
45	63	3	**********
63	68	3	**********
81	133	7	**********
99	168	8	**********
117	185	9	**********
135	205	10	**********
153	163	8	**********
171	153	8	**********
189	126	6	**********
207	123	6	**********
225	107	5	**********
243	86	4	**********
261	62	3	**********
279	54	3	**********
297	31	2	*****
315	35	2	******
333	20	1	***
351	28	1	*****
369	18	1	***
387	17	1	***
405	17	1	***
423	11	1	**
441	11	1	**
459	9	0	**
477	12	1	**
495	6	0	*
513	10	1	**
531	4	0	*
549	5	0	*
567	5	0	*
585	5	0	*
603	6	0	*
621	3	0	*
639	4	0	*
657	2	0	
675	2	0	
693	0	0	
711	2	0	

NO. OF SAMPLES OVER 720 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1994
SAMPLE INTERVAL = 15 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M, START DATE 15/06/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 30 60 90 120 150
5	89	4	**********
15	55	3	**********
25	32	2	**********
35	47	2	**********
45	25	1	********
55	36	2	**********
65	24	1	********
75	13	1	****
85	22	1	*******
95	16	1	*****
105	29	1	**********
115	24	1	********
125	41	2	**********
135	31	2	**********
145	57	3	**********
155	65	3	**********
165	68	3	**********
175	101	5	**********
185	81	4	**********
195	92	5	**********
205	70	4	**********
215	75	4	**********
225	48	2	**********
235	66	3	**********
245	70	4	**********
255	48	2	**********
265	71	4	**********
275	56	3	**********
285	61	3	**********
295	50	3	**********
305	53	3	**********
315	46	2	**********
325	88	4	**********
335	99	5	**********
345	75	4	**********
355	70	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1994
SAMPLE INTERVAL = 15 MINUTES

$R DTA/C.O+REJ:LIB O=*T*



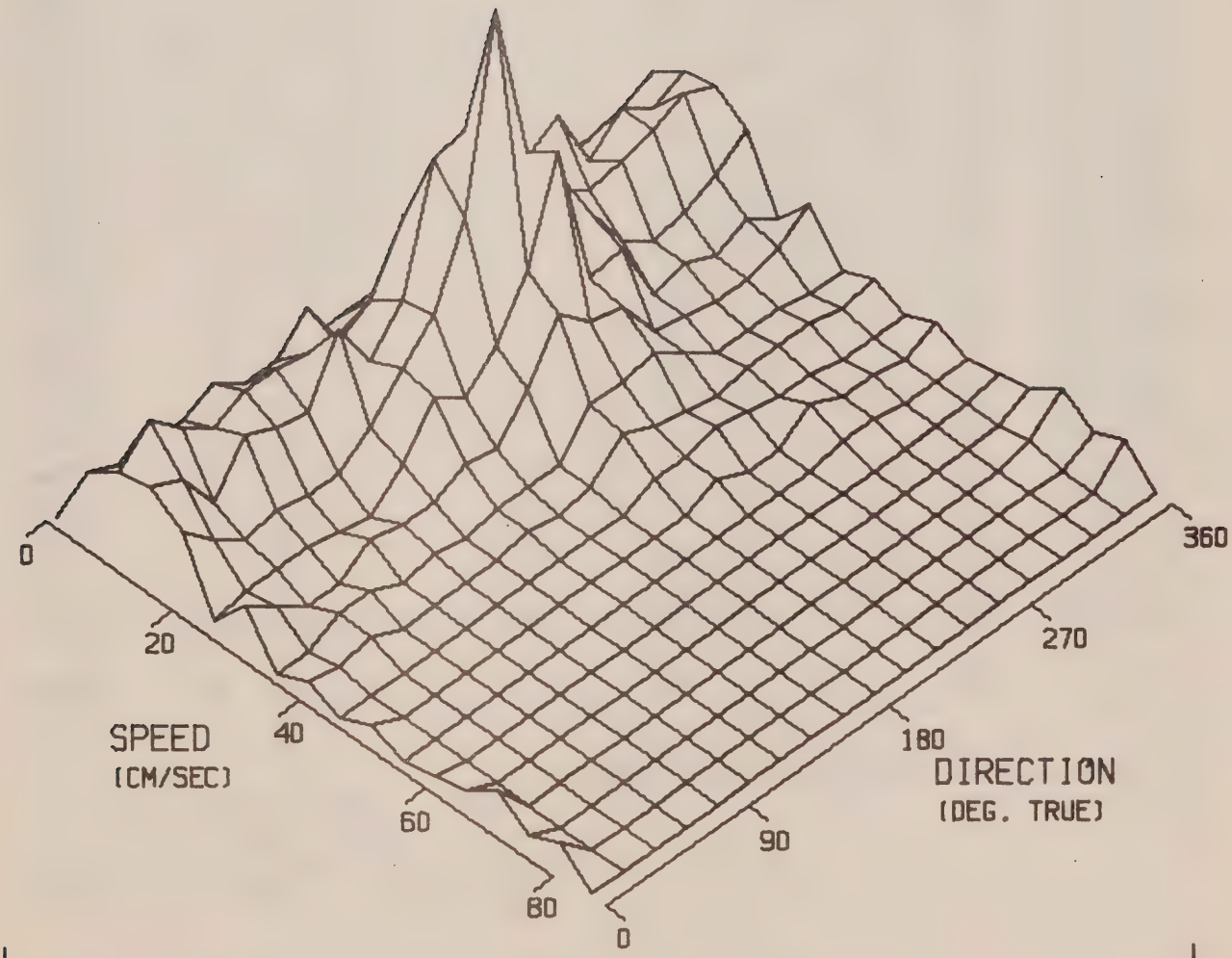
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 6/ 7/72 ENDING DATE: 18/ 7/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 6/ 7/72
NO. OF SAMPLES = 1148



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE: 6/ 7/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	008	020	014	003		001		001	004	004	001		56
15- 29	006	016	007	003	002								34
30- 44	006	015	003		002								26
45- 59	005	011	003	003	003								25
60- 74	004	008	005	001	001								19
75- 89	009	010	003	003									25
90-104	005	013	006										24
105-119	005	025	006	003	001								40
120-134	007	007	008	005									27
135-149	007	015	012	010	003								47
150-164	001	012	018	008	001								40
165-179	006	017	018	007									48
180-194	007	039	048	014	004								112
195-209	002	029	044	019	009	004							107
210-224	004	020	032	018	008	003							85
225-239	016	025	031	021	008	002							103
240-254	006	020	013	006	003	003							51
255-269	005	015	020	007	003	002							52
270-284	004	025	014	006	003	004	003						59
285-299	001	014	007	005	002	002	001						32
300-314	003	012	004	001			001						21
315-329	007	019	007	003	004		001						41
330-344	006	012	007	002	001								28
345-359	006	018	006	007	001	001	002	001	002	001	001		46
	136	336		59		8		6		2			1148
	417		155		22		2		5		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 06/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 30 60 90 120 150 .
9	1	0	
27	16	1	*****
45	41	4	**********
63	55	5	**********
81	79	7	**********
99	92	8	**********
117	80	7	**********
135	118	10	**********
153	87	8	**********
171	78	7	**********
189	91	8	**********
207	73	6	**********
225	62	5	**********
243	55	5	**********
261	33	3	**********
279	34	3	**********
297	28	2	**********
315	28	2	**********
333	17	1	******
351	13	1	****
369	10	1	***
387	11	1	****
405	6	1	**
423	6	1	**
441	4	0	*
459	3	0	*
477	5	0	**
495	1	0	
513	4	0	*
531	1	0	
549	1	0	
567	0	0	
585	0	0	
603	1	0	
621	0	0	
639	1	0	
657	0	0	
675	2	0	*
693	1	0	
711	4	0	*

NO. OF SAMPLES OVER 720 = 6
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1148
SAMPLE INTERVAL = 15 MINUTES

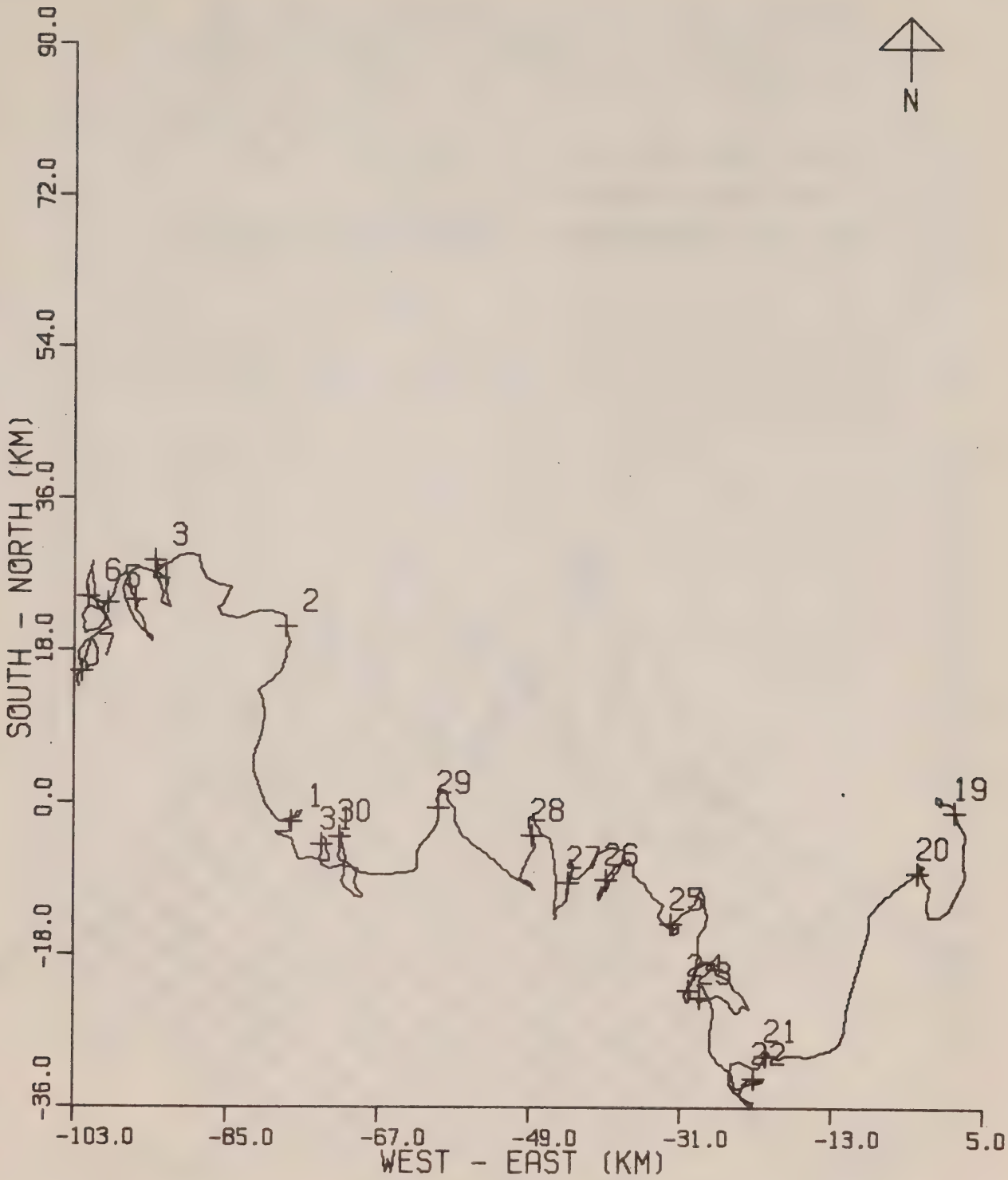
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 06/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	20	40	60	80	100
5	43	4	**********				
15	25	2	**********				
25	22	2	**********				
35	22	2	**********				
45	11	1	******				
55	18	2	*********				
65	17	1	*********				
75	17	1	*********				
85	19	2	**********				
95	9	1	*****				
105	22	2	**********				
115	24	2	**********				
125	20	2	**********				
135	22	2	**********				
145	32	3	**********				
155	36	3	**********				
165	18	2	*********				
175	44	4	**********				
185	56	5	**********				
195	95	8	**********				
205	58	5	**********				
215	72	6	**********				
225	54	5	**********				
235	62	5	**********				
245	44	4	**********				
255	30	3	**********				
265	45	4	**********				
275	24	2	**********				
285	28	2	**********				
295	23	2	**********				
305	16	1	********				
315	15	1	********				
325	31	3	**********				
335	20	2	**********				
345	28	2	**********				
355	26	2	**********				
365	0	0					
375	0	0					
385	0	0					
395	0	0					

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1148
SAMPLE INTERVAL = 15 MINUTES

DTA/C.0+RFJ:LIB 0=*T*



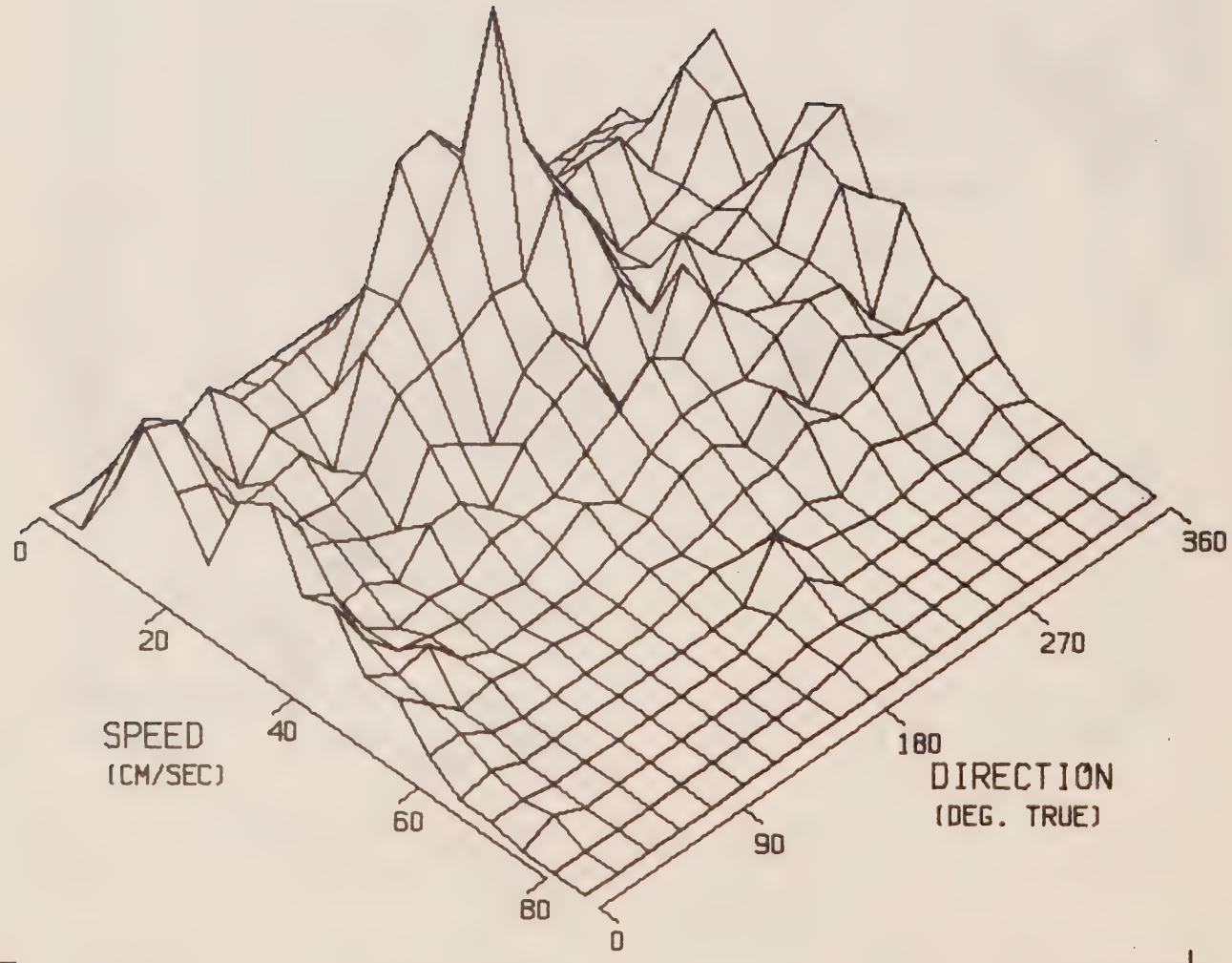
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 18/ 7/72 ENDING DATE: 7/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 18/ 7/72
NO. OF SAMPLES = 1881



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE:18/ 7/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	003	017	027	016	027	021	011	005	003				130
15- 29	006	029	011	009	016	011	009	004		003			98
30- 44	003	020	010	008	004	004	005						54
45- 59	003	007	002	009		003	002	002					28
60- 74	007	010	011	003	004		003						38
75- 89	001	010	011	006		001	001						30
90-104	002	015	004	002	003	001		001					28
105-119		009	013	008	006								36
120-134	003	012	020	018	005	001							59
135-149	003	017	029	015	002	003							69
150-164	002	030	034	006	006		002	001					81
165-179	004	021	026	018	011	007	003						90
180-194	003	027	054	025	011	006	003	004	006	003			142
195-209	002	026	051	018	011	009	006		006	003			132
210-224		022	041	015	006	011	005	003					103
225-239	006	011	030	020	010	009	009	003	001				99
240-254		006	017	019	010	010	005						67
255-269		016	018	007	017	009	012	001					80
270-284	003	016	011	017	012	012	005	002					78
285-299	002	011	008	007	010	014	011	005					68
300-314	003	019	014	009	016	010	006	004					81
315-329	002	009	014	013	015	016	011	003					83
330-344	005	018	018	015	022	009	007	008	001				103
345-359	001	021	011	020	028	010	008	005					104
	64	399	485	303	252	177	124	51	17	9	0	0	1881

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 18/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
10	2	0	*
30	5	0	*
50	19	1	*****
70	39	2	**********
90	55	3	***************
110	103	5	*****************************
130	117	6	*********************************
150	131	7	*************************************
170	131	7	*************************************
190	142	8	**
210	116	6	*********************************
230	89	5	************************
250	87	5	************************
270	71	4	********************
290	76	4	*********************
310	70	4	********************
330	66	4	******************
350	65	3	******************
370	58	3	****************
390	65	3	******************
410	54	3	***************
430	46	2	************
450	40	2	**********
470	35	2	*********
490	36	2	*********
510	31	2	********
530	30	2	********
550	25	1	******
570	22	1	******
590	11	1	***
610	7	0	**
630	12	1	***
650	5	0	*
670	5	0	*
690	4	0	*
710	2	0	*
730	4	0	*
750	2	0	*
770	0	0	
790	3	0	*

NO. OF SAMPLES OVER 800 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1881
SAMPLE INTERVAL = 15 MINUTES

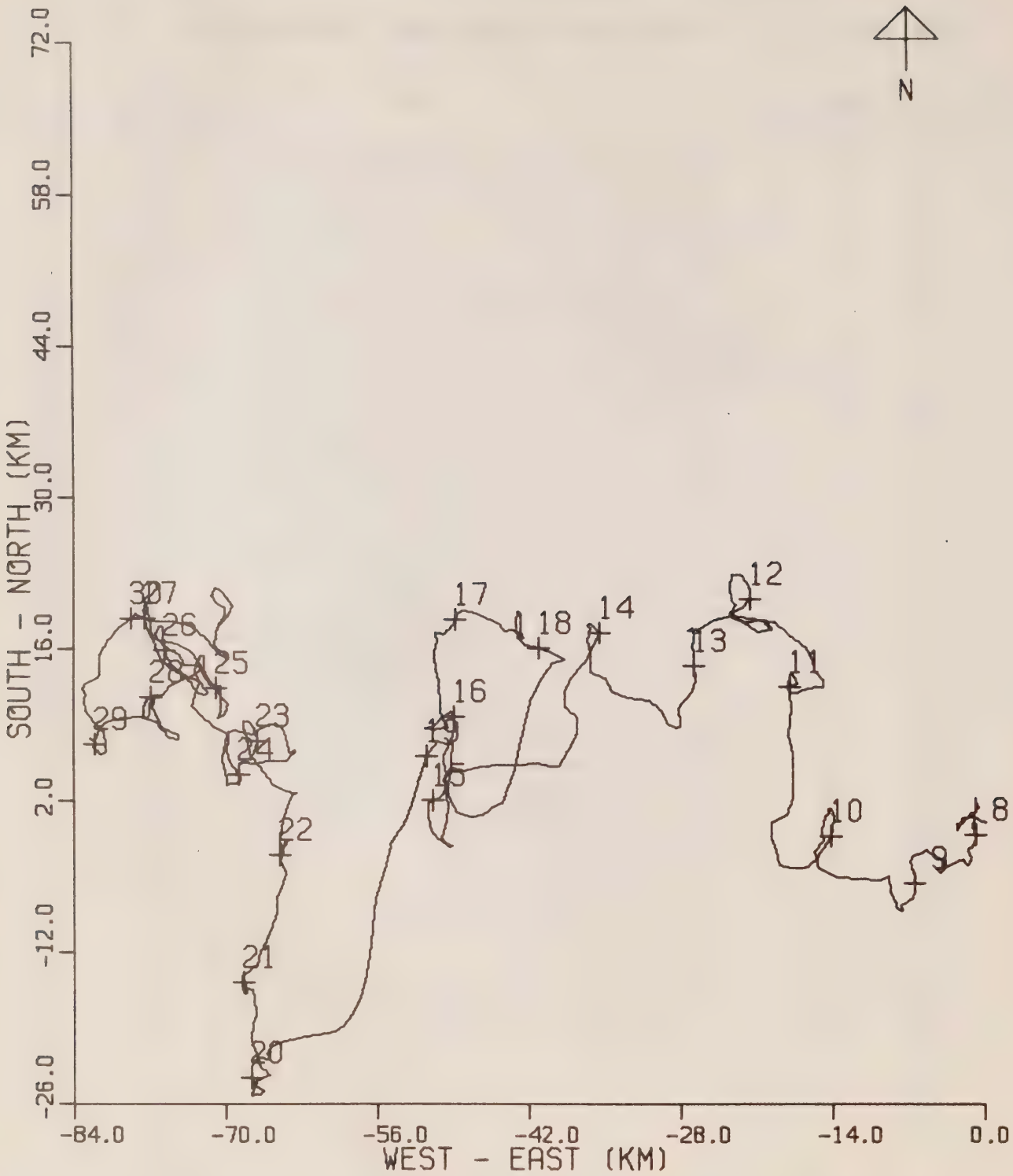
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 18/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	93	5	**********
15	87	5	**********
25	48	3	**********
35	41	2	**********
45	20	1	*******
55	21	1	*******
65	31	2	**********
75	18	1	*******
85	23	1	********
95	14	1	*****
105	22	1	*******
115	24	1	********
125	46	2	**********
135	36	2	**********
145	46	2	**********
155	58	3	**********
165	62	3	**********
175	75	4	**********
185	67	4	**********
195	105	6	**********
205	78	4	**********
215	82	4	**********
225	58	3	**********
235	62	3	**********
245	50	3	**********
255	46	2	**********
265	64	3	**********
275	39	2	**********
285	56	3	**********
295	38	2	**********
305	67	4	**********
315	41	2	**********
325	56	3	**********
335	84	4	**********
345	58	3	**********
355	65	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1881
SAMPLE INTERVAL = 15 MINUTES

)TA/C.0+REJ;LIB 0=*T*



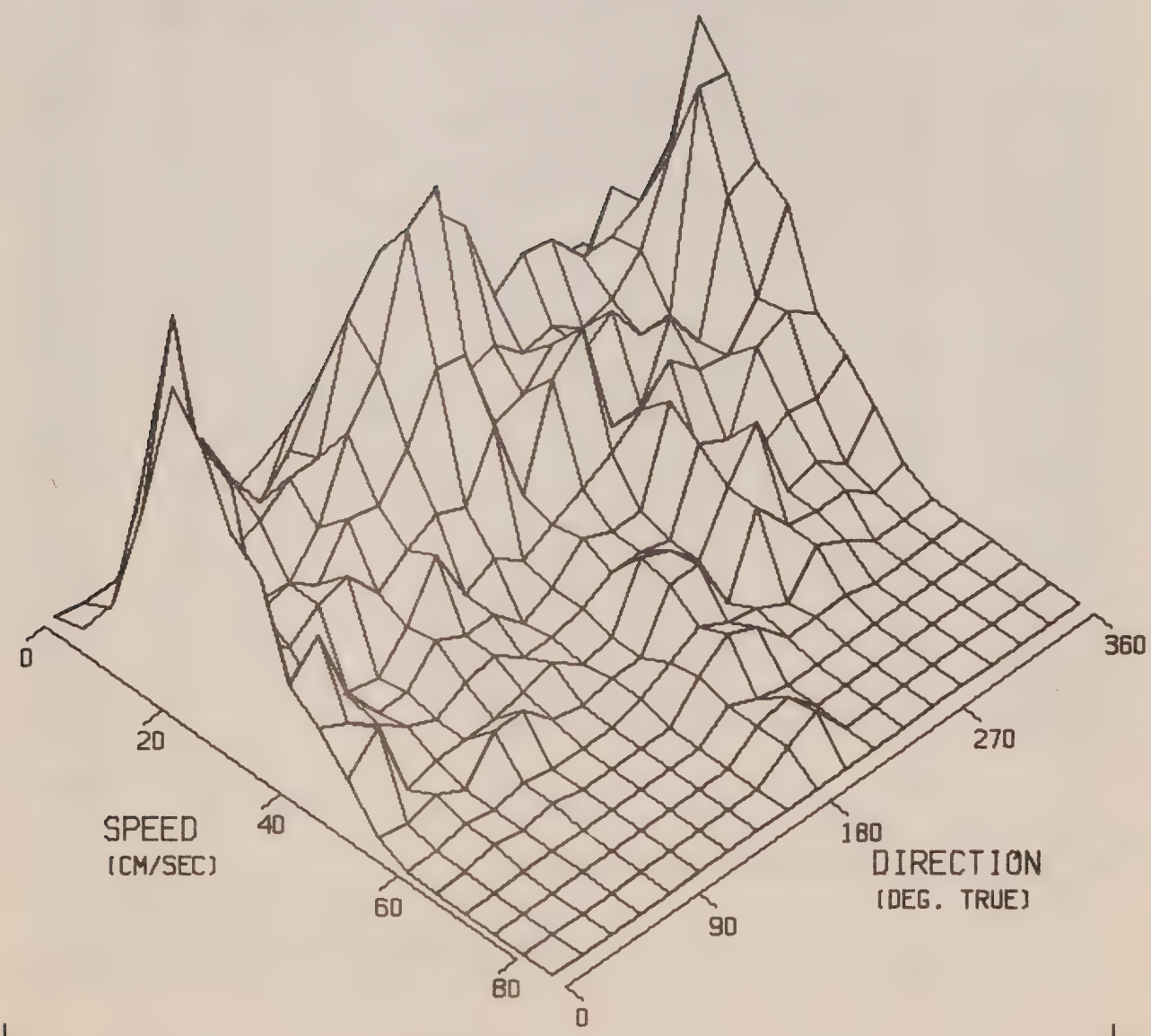
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 7/ 8/72 ENDING DATE: 30/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 7/ 8/72
NO. OF SAMPLES = 2284



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE: 7/ 8/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	002	027	055	042	024	018	011						179
15- 29	002	033	036	025	017	012	007						132
30- 44	002	021	023	011	005	010		001					73
45- 59	002	023	013	011	001	003	002		001				56
60- 74	006	017	005	009	002	004	002	001					46
75- 89	004	013	005	014	002		003		001				42
90-104	006	023	012	017	006	004	005	001					74
105-119	003	013	016	016	012	005	004						69
120-134	001	019	023	016	010	002	002						73
135-149	012	028	035	018	004	002	002						101
150-164	004	030	038	018	005	001	001						97
165-179	003	021	055	020	005	001		002	002	001			110
180-194	001	033	057	023	005	007	002	009	009	009			155
195-209	004	024	020	010	006	002	012	006		004	001		89
210-224	001	023	023	020	007	004	011	006	003				98
225-239	003	023	025	024	010	005	004	003					97
240-254	004	019	013	016	009	009	003						73
255-269	009	016	020	015	015	015	013						103
270-284	004	020	016	017	020	013	017	004					111
285-299	005	013	012	011	009	007	008	005	001				71
300-314	007	011	020	011	015	005	005	002					76
315-329	003	014	029	013	018	016	008	001					102
330-344	003	014	033	031	014	013	002	001					111
345-359	005	021	035	045	024	014	001						145
	96		619		245		125		17		1		2283
		499		453		172		42		14		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 07/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 50 100 150 200 250 .
10	6	0	*
30	14	1	***
50	31	1	******
70	46	2	*********
90	80	4	*****************
110	108	5	************************
130	140	6	*******************************
150	178	8	**
170	189	8	**
190	163	7	**********************************
210	125	5	**************************
230	141	6	*******************************
250	137	6	******************************
270	111	5	************************
290	102	4	**********************
310	97	4	*********************
330	71	3	***************
350	70	3	***************
370	53	2	**********
390	53	2	**********
410	50	2	**********
430	52	2	**********
450	33	1	*******
470	36	2	*******
490	29	1	******
510	42	2	********
530	31	1	******
550	22	1	****
570	15	1	***
590	6	0	*
610	9	0	**
630	11	0	**
650	8	0	**
670	7	0	*
690	1	0	
710	1	0	
730	3	0	*
750	2	0	
770	3	0	*
790	6	0	*

NO. OF SAMPLES OVER 800 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2284
SAMPLE INTERVAL = 15 MINUTES

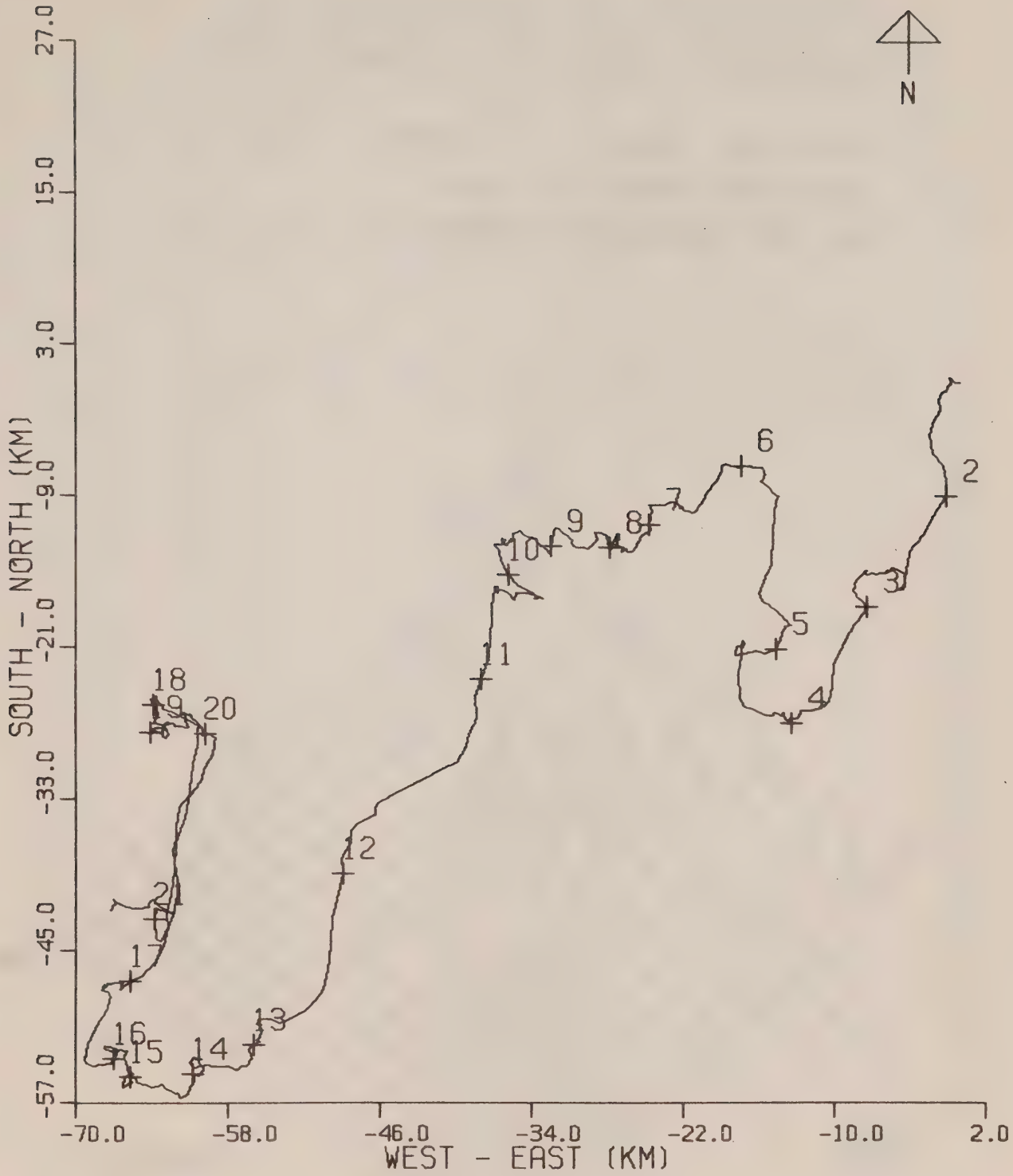
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 07/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 30 60 90 120 150
5	125	5	**********
15	106	5	**********
25	80	4	********
35	62	3	******
45	31	1	***
55	36	2	****
65	36	2	****
75	25	1	***
85	44	2	*****
95	30	1	***
105	48	2	*****
115	48	2	*****
125	45	2	*****
135	59	3	*******
145	70	3	********
155	78	3	*********
165	70	3	********
175	78	3	*********
185	83	4	**********
195	87	4	**********
205	55	2	******
215	80	4	*********
225	56	2	******
235	59	3	*******
245	57	2	******
255	68	3	********
265	66	3	********
275	55	2	******
285	76	3	*********
295	36	2	****
305	66	3	********
315	41	2	*****
325	71	3	********
335	83	4	**********
345	94	4	***********
355	80	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2284
SAMPLE INTERVAL = 15 MINUTES

)TA/C.0+REJ:LIB 0=*T*



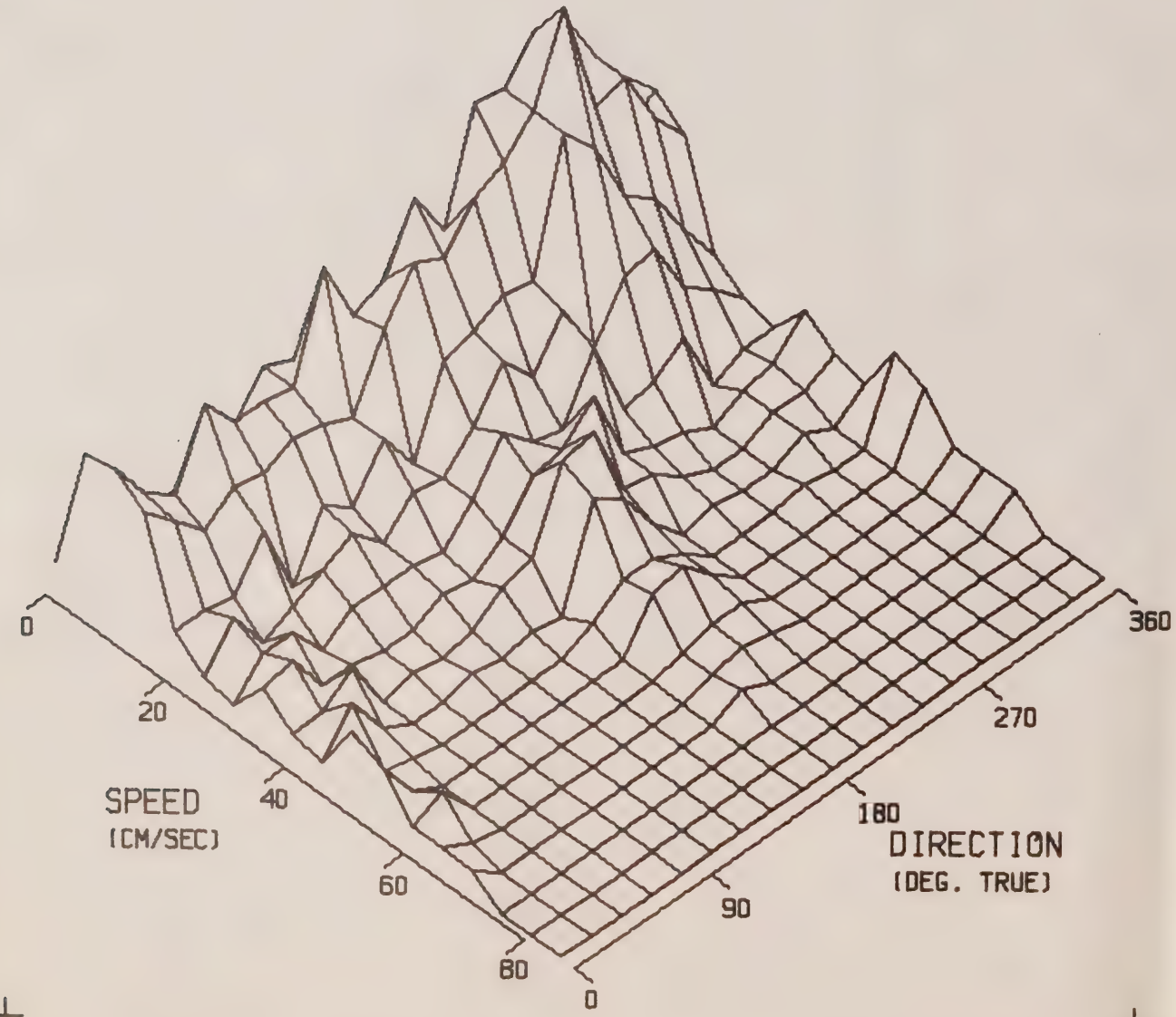
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 1/ 9/72 ENDING DATE: 21/ 9/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 1/ 9/72
NO. OF SAMPLES = 1955



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE: 1/ 9/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	020	021	011	007	008	014	017	009	004				111
15- 29	010	021	007	006	007	002	002	002					57
30- 44	004	013	005	005	006	004	001						38
45- 59	008	023	010	003	002	001							47
60- 74	010	022	008	003		001							44
75- 89	008	016	006	005	003								38
90-104	010	026	011	005									52
105-119	013	018	014	006	001	001							53
120-134	014	019	010	004	005								52
135-149	015	031	011	010	003	003							73
150-164	006	021	011	011	006	002							57
165-179	013	029	016	006	005	006	004		001				80
180-194	016	036	032	021	017	025	011	005	002				165
195-209	014	031	016	012	016	012	006		002				109
210-224	014	031	023	010	015	004	005	004					106
225-239	014	038	027	018	010	005							112
240-254	014	035	025	014	007	001							96
255-269	018	047	029	010	003	001							108
270-284	016	058	045	011	002								132
285-299	015	042	031	017									105
300-314	008	046	025	013	002	002	001						97
315-329	014	045	025	006	002	001							93
330-344	010	019	018	006	002	001							56
345-359	017	036	011	002	005	001	001		001				74
	301	724	427	211	127	87	48	20	10	0	0	0	1955

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 01/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
9	12	1	**
27	44	2	*********
45	86	4	******************
63	104	5	**********************
81	142	7	******************************
99	172	9	************************************
117	173	9	************************************
135	166	8	**********************************
153	150	8	********************************
171	122	6	*************************
189	101	5	*********************
207	87	4	******************
225	75	4	****************
243	64	3	**************
261	59	3	************
279	38	2	********
297	42	2	********
315	32	2	******
333	34	2	*******
351	32	2	******
369	23	1	*****
387	25	1	*****
405	30	2	******
423	19	1	****
441	16	1	***
459	13	1	***
477	23	1	*****
495	12	1	**
513	6	0	*
531	12	1	**
549	10	1	**
567	5	0	*
585	5	0	*
603	7	0	*
621	2	0	
639	5	0	*
657	1	0	
675	4	0	*
693	1	0	
711	1	0	

NO. OF SAMPLES OVER 720 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1955
SAMPLE INTERVAL = 15 MINUTES

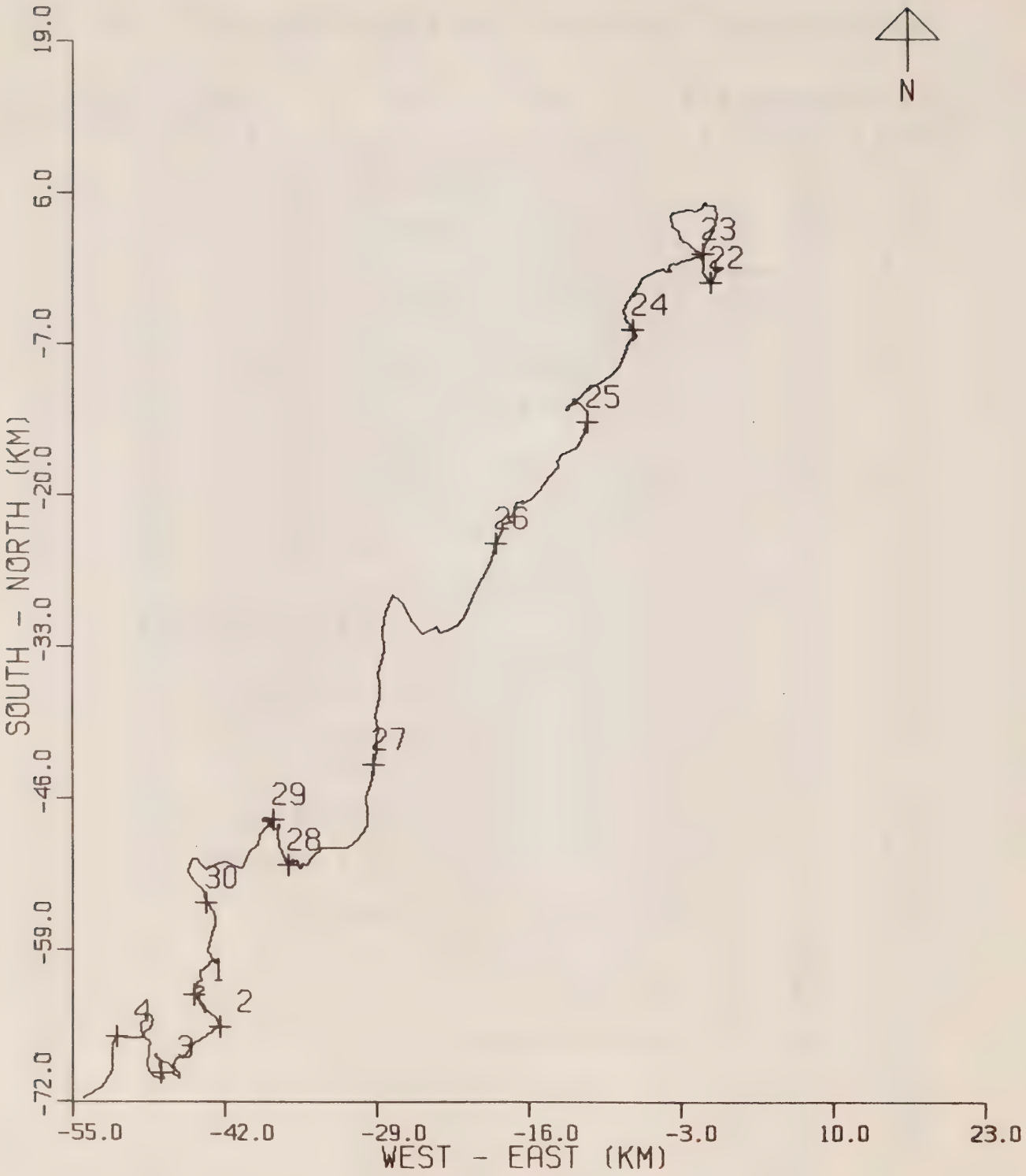
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 01/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	70	4	**********
15	68	3	**********
25	30	2	**********
35	29	1	**********
45	28	1	*********
55	28	1	*********
65	34	2	**********
75	22	1	*******
85	34	2	**********
95	25	1	********
105	44	2	**********
115	28	1	*********
125	38	2	**********
135	38	2	**********
145	49	3	**********
155	46	2	**********
165	40	2	**********
175	73	4	**********
185	82	4	**********
195	111	6	**********
205	59	3	**********
215	91	5	**********
225	54	3	**********
235	73	4	**********
245	76	4	**********
255	56	3	**********
265	91	5	**********
275	66	3	**********
285	99	5	**********
295	53	3	**********
305	80	4	**********
315	55	3	**********
325	55	3	**********
335	45	2	**********
345	37	2	**********
355	48	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1955
SAMPLE INTERVAL = 15 MINUTES

R DTA/C,O+RFJ:LIB O=*T*



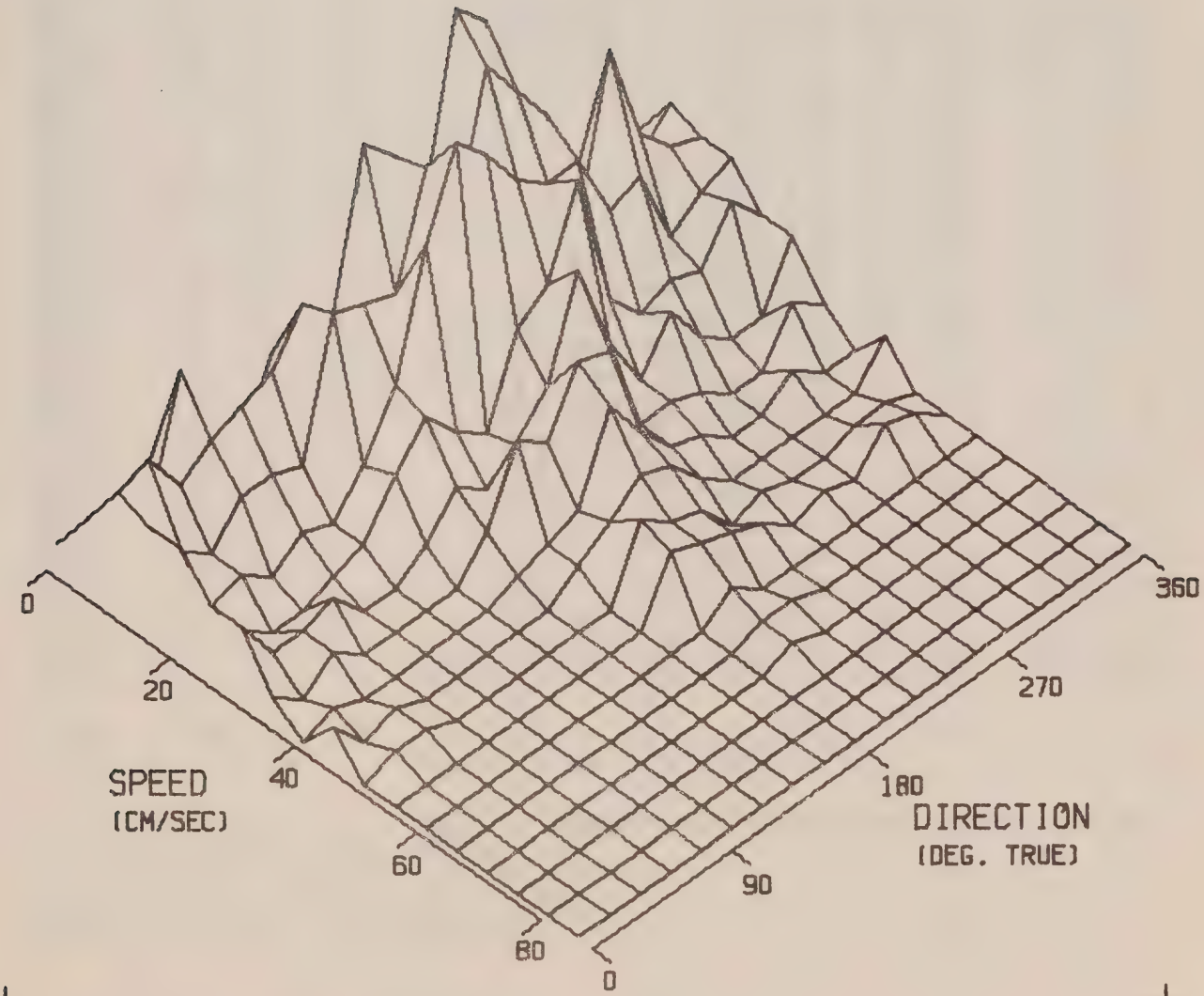
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 21/ 9/72 ENDING DATE: 4/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 21/ 9/72
NO. OF SAMPLES = 1201



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE:21/ 9/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
	000 TO	080 TO	160 TO	240 TO	320 TO	400 TO	480 TO	560 TO	640 TO	720 TO	800 TO	880 TO	
DIR	079	159	239	319	399	479	559	639	719	799	879	959	
0- 14	004	014	015	005	002	002							42
15- 29	002	008	003	001		001	001						16
30- 44	002	009	002	001	002	001	001						18
45- 59	009	004	001	002									16
60- 74	011	010	002	002									25
75- 89	003	008	004	001									16
90-104	004	015	005	002									26
105-119	005	015	005	001	001								27
120-134	006	011	015	004	001								37
135-149	007	019	011	014	002	001							54
150-164	011	021	017	005	006	003							63
165-179	005	023	018	007	009	002	003	001					68
180-194	009	032	038	009	008	007	007	004					114
195-209	009	017	025	006	010	011	004	003	001				86
210-224	010	041	026	020	012	005	004		001				119
225-239	012	024	022	015	007	006	002	001					89
240-254	012	031	021	012	003	001	001						81
255-269	007	024	017	006	003		001						58
270-284	009	017	015	011	002								54
285-299	003	014	009	005			001						32
300-314	003	019	023	002	001		001						49
315-329	009	016	005	006		002	003						41
330-344	005	008	013	004	002		002						34
345-359	006	014	004	008	002	001		001					36
	163		316		73		31		2		0		1201
		414		149		43		10		0		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 21/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 30 60 90 120 150
8	4	0	*
24	21	2	*******
40	51	4	******************
56	42	3	***************
72	50	4	******************
88	71	6	**************************
104	83	7	*******************************
120	104	9	**
136	79	7	*****************************
152	80	7	*****************************
168	75	6	**************************
184	87	7	********************************
200	60	5	*********************
216	51	4	******************
232	36	3	*************
248	33	3	************
264	40	3	***************
280	24	2	********
296	32	3	************
312	20	2	*******
328	21	2	*******
344	26	2	*********
360	14	1	*****
376	2	0	*
392	12	1	****
408	10	1	***
424	10	1	***
440	6	0	**
456	10	1	***
472	4	0	*
488	9	1	***
504	7	1	**
520	2	0	*
536	7	1	**
552	6	0	**
568	7	1	**
584	1	0	
600	0	0	
616	1	0	
632	1	0	

NO. OF SAMPLES OVER 640 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1201
SAMPLE INTERVAL = 15 MINUTES

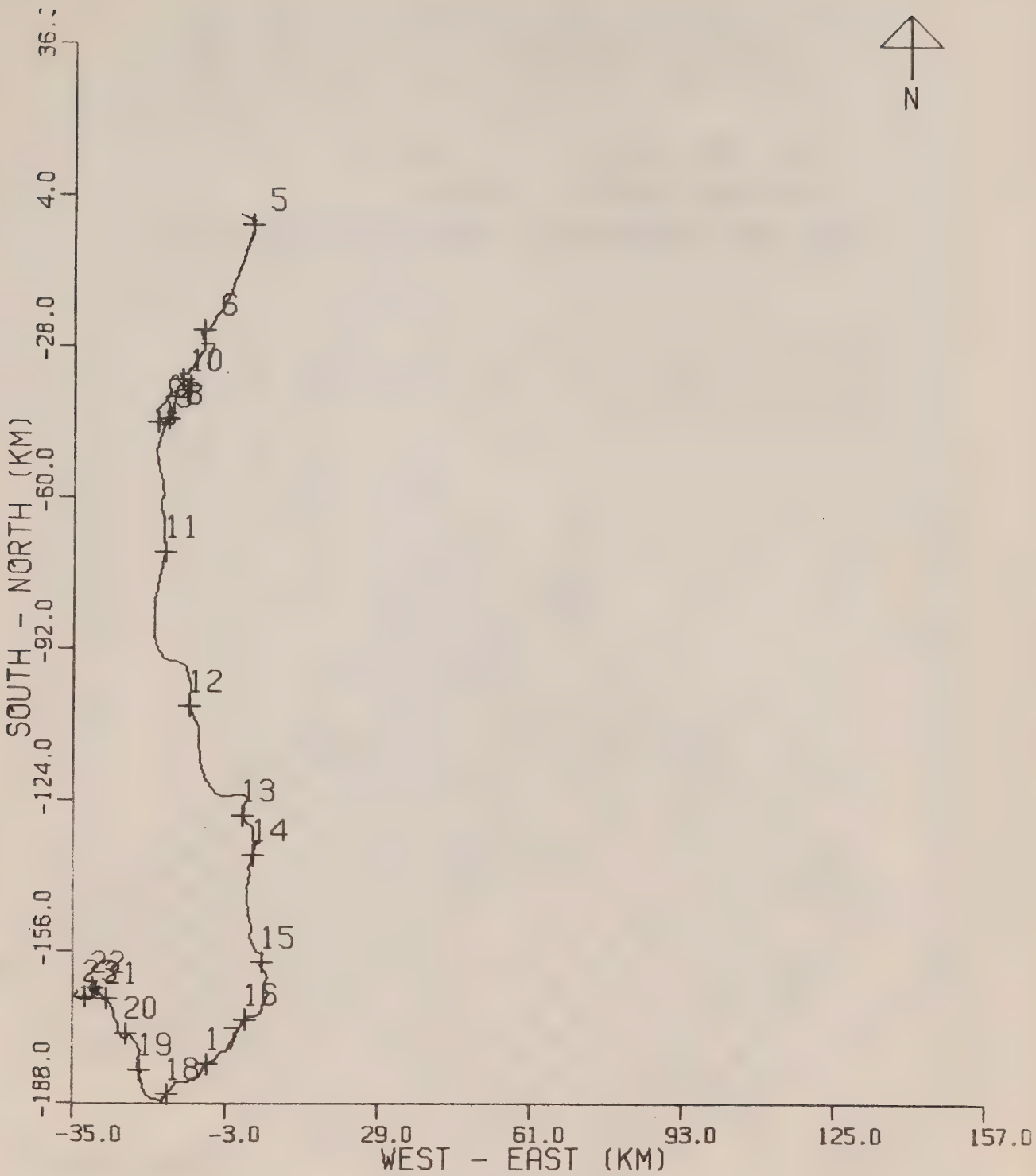
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 21/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	20	40	60	80	100
5	32	3	**********				
15	16	1	********				
25	10	1	*****				
35	15	1	********				
45	6	0	***				
55	13	1	*******				
65	22	2	**********				
75	12	1	******				
85	12	1	******				
95	9	1	*****				
105	14	1	*******				
115	25	2	**********				
125	28	2	**********				
135	23	2	**********				
145	40	3	**********				
155	51	4	**********				
165	39	3	**********				
175	54	4	**********				
185	60	5	**********				
195	75	6	**********				
205	52	4	**********				
215	95	8	**********				
225	52	4	**********				
235	61	5	**********				
245	63	5	**********				
255	44	4	**********				
265	41	3	**********				
275	31	3	**********				
285	25	2	**********				
295	21	2	**********				
305	38	3	**********				
315	23	2	**********				
325	29	2	**********				
335	30	2	**********				
345	19	2	**********				
355	21	2	**********				
365	0	0					
375	0	0					
385	0	0					
395	0	0					

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1201
SAMPLE INTERVAL = 15 MINUTES

)R DTA/C.0+REJ:LIB 0=*T*



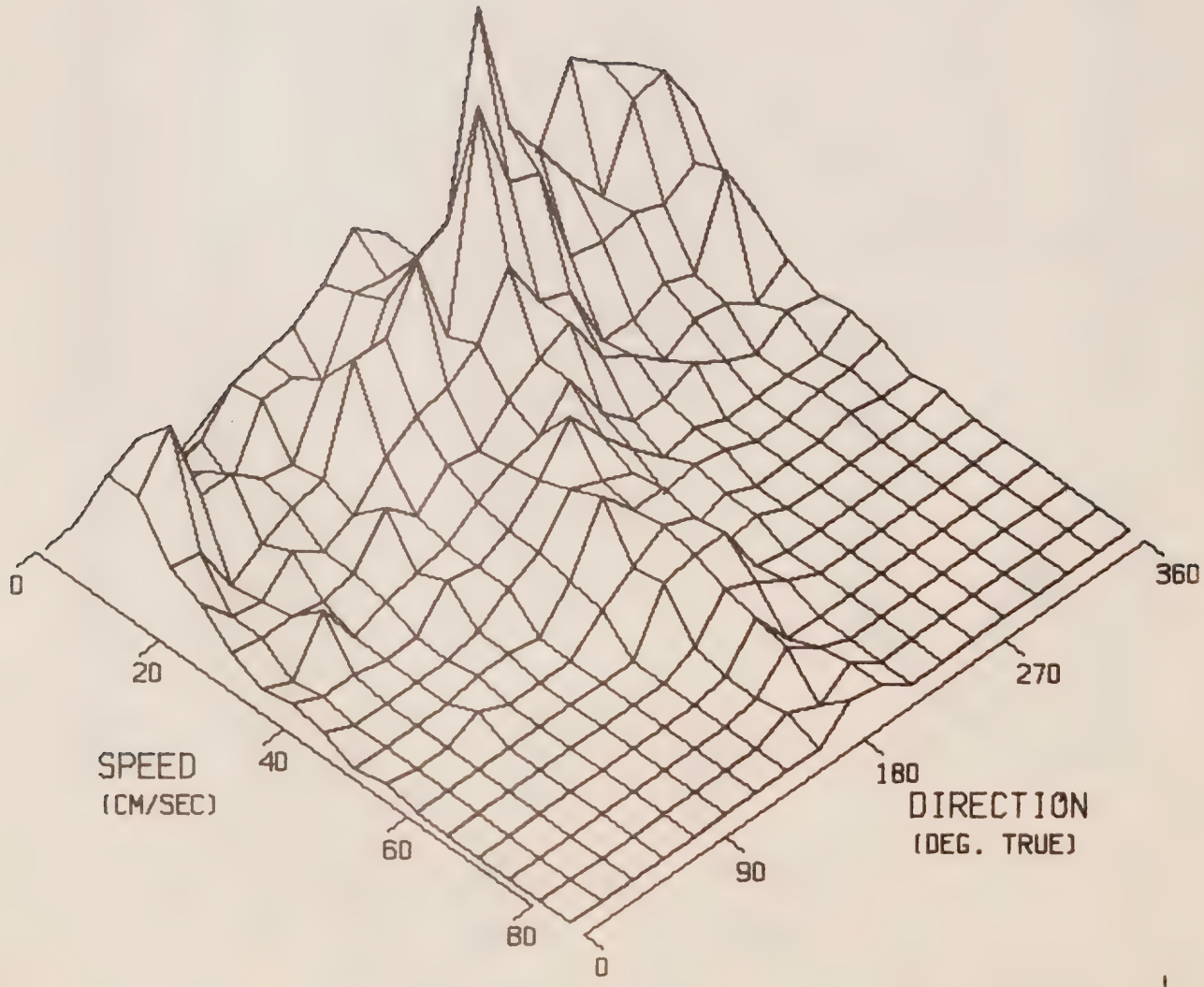
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 4/10/72 ENDING DATE: 23/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 4/10/72
NO. OF SAMPLES = 1813



STN. NO. HS-4 DEPTH 3 M.

STARTING DATE: 4/10/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	005	025	012	011	005	001							59
15- 29	007	023	010	002	001								43
30- 44	005	012	003	003	005								28
45- 59	008	015	006	004	002	001							36
60- 74	004	008	005	003			002						22
75- 89	004	006	004	004	002		001						21
90-104	013	008	009	010	002	004	001						47
105-119	009	012	015	007	004	002							49
120-134	010	015	026	007	005	006							69
135-149	012	006	027	017	009	009	007	002					89
150-164	014	019	020	016	009	014	008	009		003			112
165-179	013	029	024	016	009	016	011	009	005	004	002		138
180-194	023	018	034	022	020	016	016	013	007	005	006	001	181
195-209	013	028	048	019	014	010	011	005	001	002	002	001	154
210-224	008	038	043	024	010	002	001	001	002				129
225-239	010	029	040	014	003	004	003						103
240-254	009	026	030	004	003	001	001						74
255-269	012	027	022	007	004	002							74
270-284	010	028	021	004	005								68
285-299	009	024	013	001	002								49
300-314	009	026	012	007	002	001							57
315-329	011	039	017	007	001		001						76
330-344	009	031	021	011	001								73
345-359	008	027	010	006	003	003	001						58
	235		472		121		64		15		10		1809
		519		226		92		39		14		2	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 4

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M. START DATE 04/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
11	13	1	***
33	52	3	**********
55	104	6	********************
77	122	7	************************
99	124	7	************************
121	140	8	****************************
143	156	9	******************************
165	167	9	*******************************
187	144	8	****************************
209	123	7	************************
231	91	5	******************
253	75	4	**************
275	67	4	*************
297	51	3	**********
319	48	3	**********
341	35	2	*******
363	30	2	******
385	28	2	******
407	30	2	******
429	18	1	****
451	26	1	******
473	24	1	*****
495	21	1	*****
517	14	1	****
539	20	1	*****
561	13	1	***
583	14	1	****
605	7	0	**
627	11	1	***
649	3	0	*
671	8	0	**
693	2	0	*
715	6	0	**
737	2	0	*
759	4	0	*
781	4	0	*
803	0	0	
825	3	0	*
847	4	0	*
869	3	0	*

NO. OF SAMPLES OVER 880 = 6
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1813
SAMPLE INTERVAL = 15 MINUTES

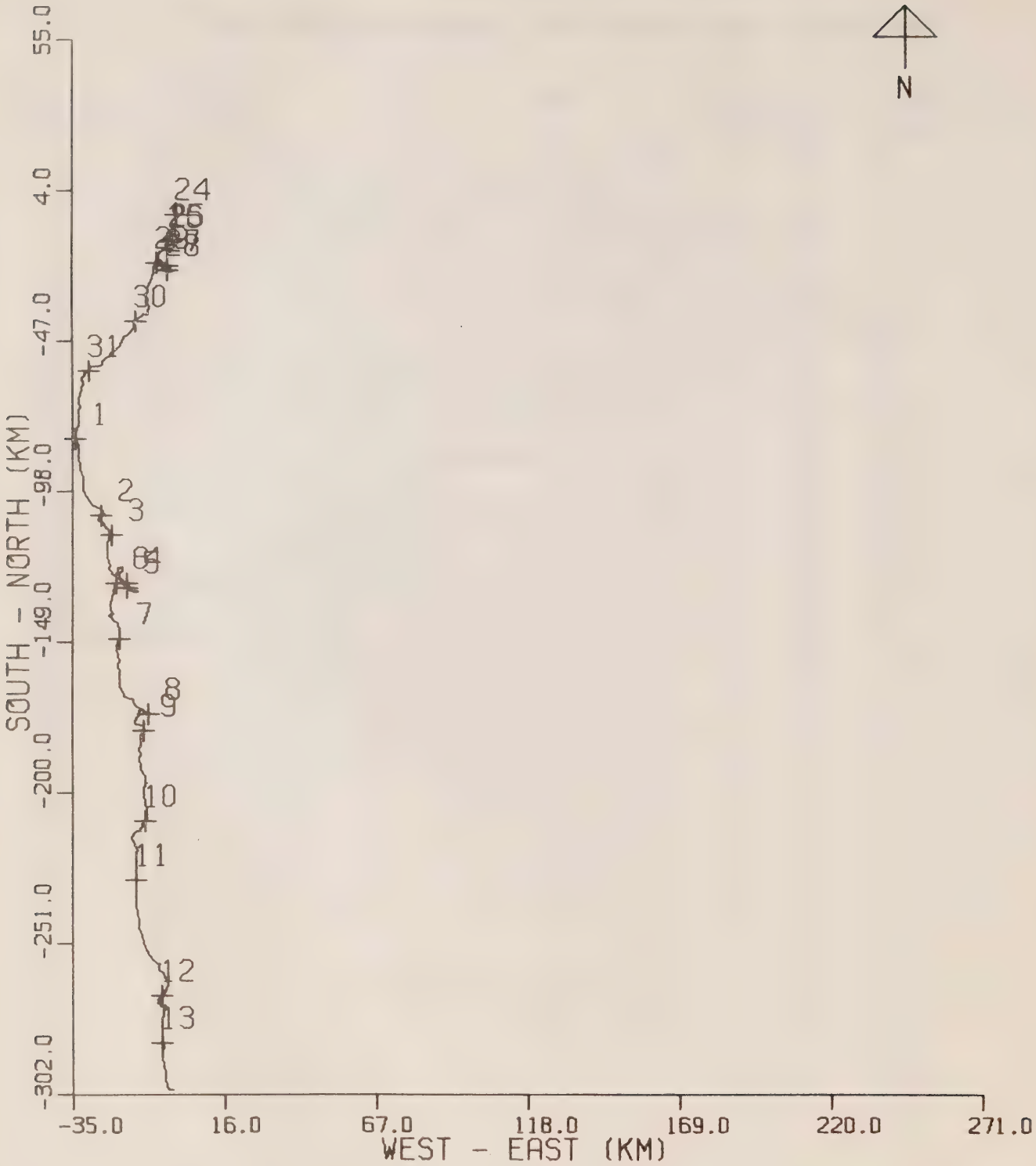
HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 3M. START DATE 04/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	35	2	**********
15	44	2	**********
25	23	1	********
35	25	1	********
45	16	1	*****
55	23	1	********
65	17	1	******
75	16	1	*****
85	15	1	*****
95	27	1	*********
105	35	2	**********
115	29	2	**********
125	58	3	**********
135	29	2	**********
145	71	4	**********
155	88	5	**********
165	85	5	**********
175	106	6	**********
185	92	5	**********
195	129	7	**********
205	89	5	**********
215	96	5	**********
225	69	4	**********
235	67	4	**********
245	62	3	**********
255	44	2	**********
265	50	3	**********
275	34	2	**********
285	41	2	**********
295	34	2	**********
305	48	3	**********
315	30	2	**********
325	55	3	**********
335	62	3	**********
345	33	2	**********
355	36	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1813
SAMPLE INTERVAL = 15 MINUTES

R DTA/C,O+REJ:LIB O=*T*



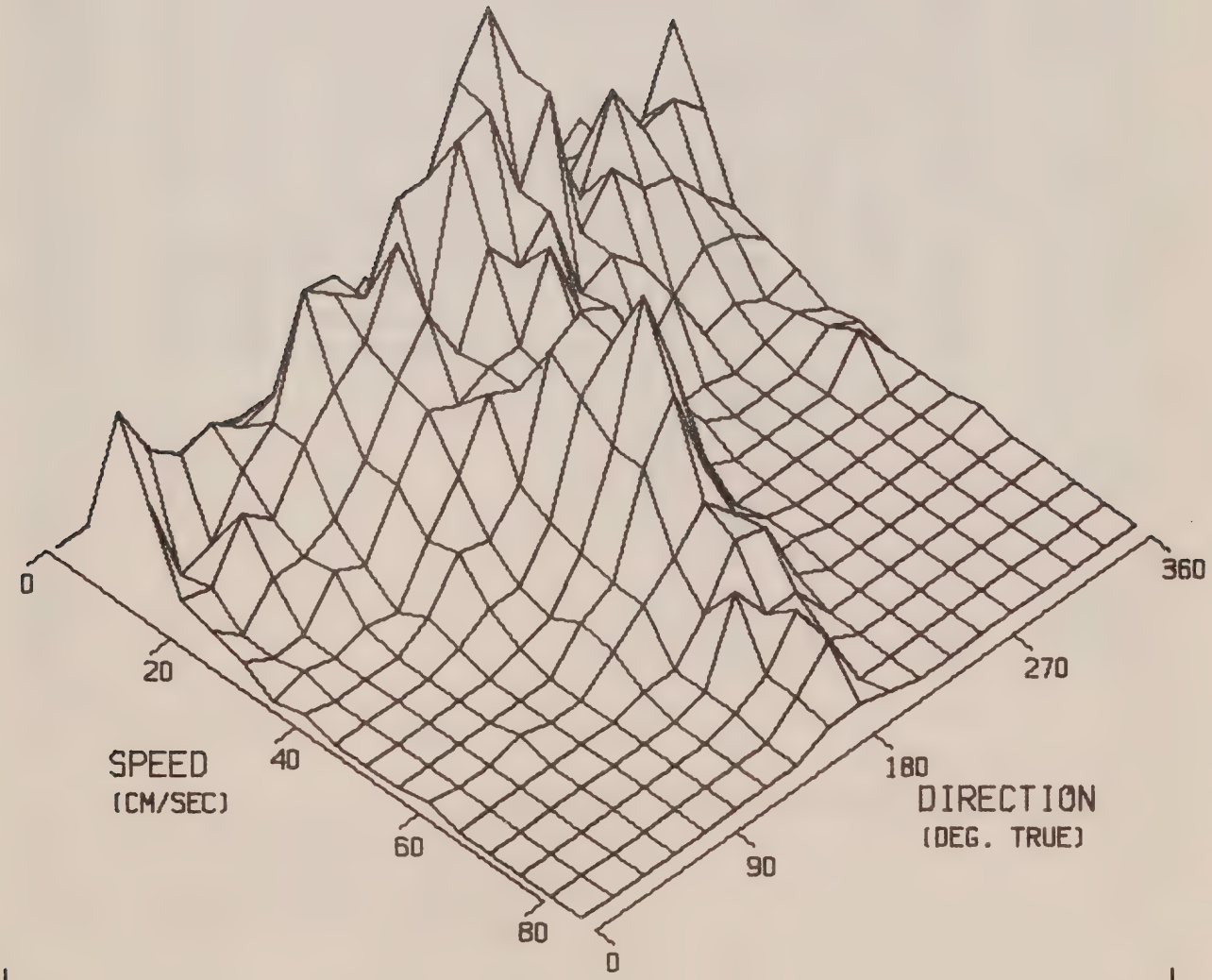
STN. NO. HS-4

DEPTH 3 M.

STARTING DATE: 23/10/72 ENDING DATE: 13/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 3 M.
STARTING DATE: 23/10/72
NO. OF SAMPLES = 2014



STN. NO. HS=4 DEPTH 3 M.

STARTING DATE:23/10/72
SAMPLE INTERVAL = 15 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0= 14	004	021	008	003	001	001							38
15= 29	002	010	002										14
30= 44	006	006	006										18
45= 59	008	014	015	004									41
60= 74	004	012	006	005	001			001					29
75= 89	005	010	015	005		002							37
90=104	004	022	018	013	007	008	001						73
105=119	006	016	022	014	010	002	001	001					72
120=134	004	024	023	022	008	006	005	004					96
135=149	009	028	033	026	023	012	010	008	002	001			152
150=164	007	020	023	020	015	025	017	009	007	003	002		148
165=179	006	019	030	019	017	033	032	016	010	010	002		194
180=194	005	034	049	031	027	035	040	015	013	006	004	003	262
195=209	008	030	036	029	017	019	016	008	008	001	001		173
210=224	008	024	033	021	012	012	008	004	002				124
225=239	004	038	044	020	015	007	002	001					131
240=254	009	019	027	012	002								69
255=269	001	026	016	009	002	001							55
270=284	007	021	021	013	001								63
285=299	008	015	016	008	001								48
300=314	008	021	015	001									45
315=329	013	019	017	006	001								56
330=344	001	016	011	004	004							001	37
345=359	003	016	010	002	001	005		001					38
	140		496		165		132		42		9		2013
		481		287		168		68		21		4	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 3M, START DATE 23/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
11	17	1	****
33	24	1	******
55	54	3	**********
77	88	4	**********
99	109	5	**********
121	130	6	**********
143	151	7	**********
165	180	9	**********
187	159	8	**********
209	121	6	**********
231	97	5	**********
253	83	4	**********
275	77	4	**********
297	85	4	**********
319	53	3	**********
341	45	2	**********
363	49	2	**********
385	44	2	**********
407	54	3	**********
429	42	2	**********
451	41	2	**********
473	46	2	**********
495	35	2	**********
517	36	2	**********
539	34	2	**********
561	26	1	********
583	18	1	*****
605	19	1	*****
627	20	1	*****
649	13	1	***
671	15	1	****
693	11	1	***
715	6	0	**
737	4	0	*
759	7	0	**
781	4	0	*
803	5	0	*
825	5	0	*
847	1	0	
869	1	0	

NO. OF SAMPLES OVER 880 = 5
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2014
SAMPLE INTERVAL = 15 MINUTES

HISTOGRAM OF DIRECTION

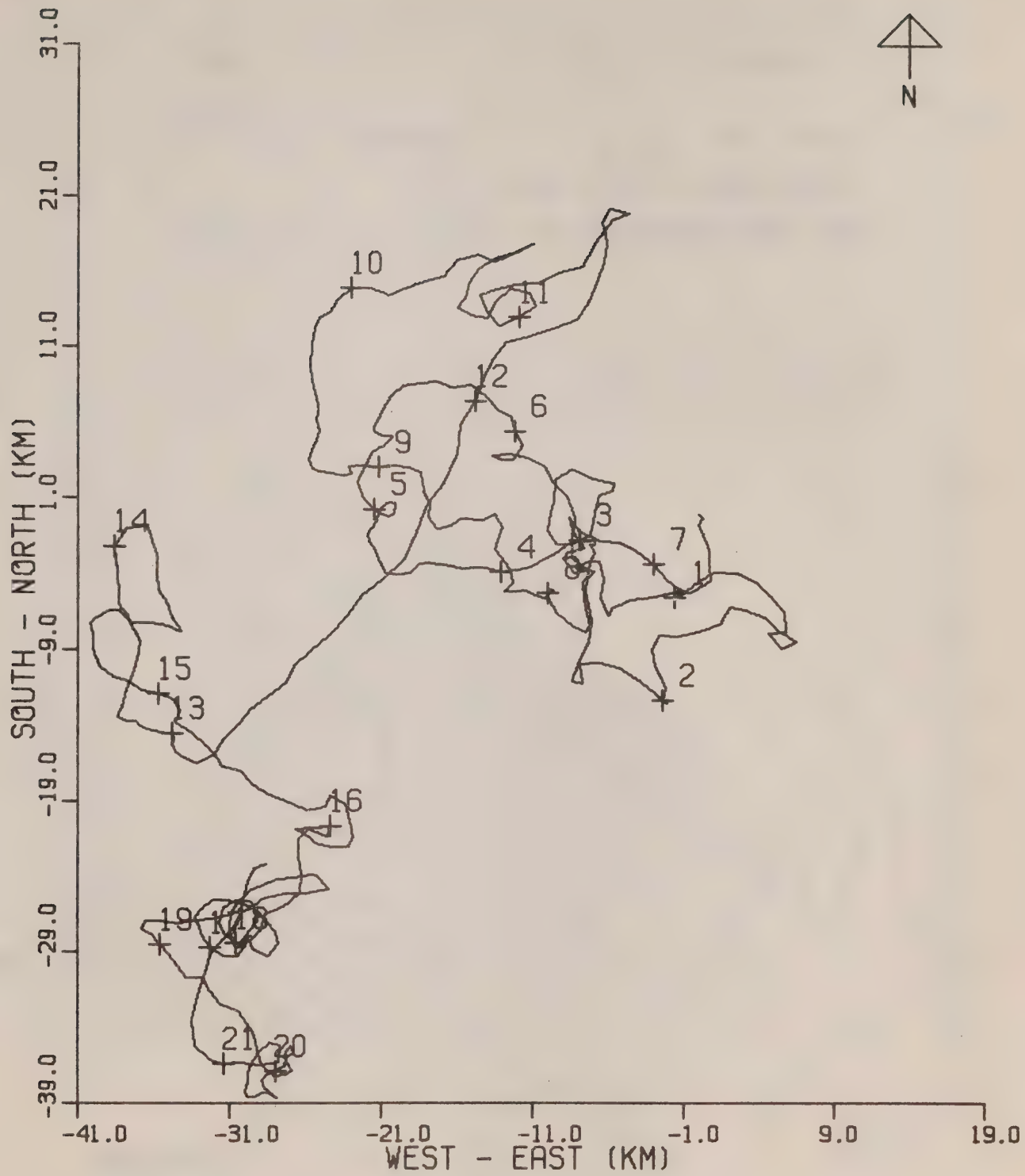
HOWE SOUND HS-4 DEPTH 3M. START DATE 23/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	40 80 120 160 200
5	31	2	********
15	11	1	***
25	10	0	***
35	14	1	****
45	19	1	*****
55	26	1	*******
65	21	1	*****
75	18	1	*****
85	32	2	********
95	33	2	********
105	61	3	*****************
115	46	2	************
125	81	4	**********************
135	66	3	******************
145	101	5	****************************
155	116	6	********************************
165	105	5	*****************************
175	165	8	**
185	131	7	************************************
195	169	8	**
205	92	5	*************************
215	104	5	****************************
225	63	3	*****************
235	88	4	************************
245	56	3	***************
255	40	2	**********
265	38	2	**********
275	33	2	********
285	38	2	**********
295	30	1	********
305	37	2	*********
315	25	1	******
325	39	2	**********
335	25	1	******
345	31	2	********
355	19	1	*****
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2014
SAMPLE INTERVAL = 15 MINUTES

DTA/C.0+REJ;LIB 0=*T*

DATA FOR 10-METRE DEPTH



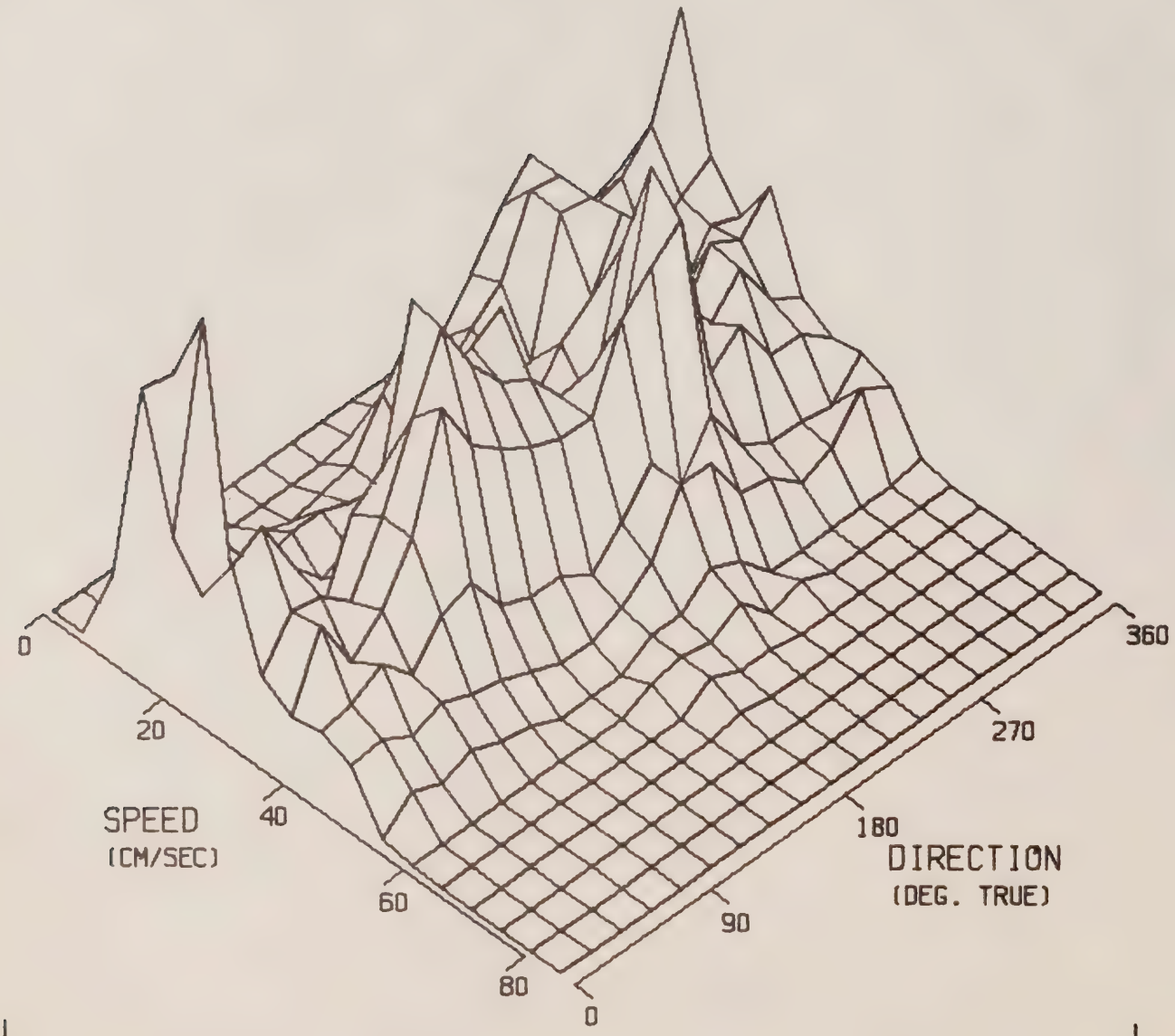
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 30/11/71 ENDING DATE: 21/12/71

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 30/11/71
NO. OF SAMPLES = 3019



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE:30/11/71
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		039	035	028	016	015	007	002					142
15- 29		040	059	033	026	019	011						188
30- 44		019	030	029	018	016	006						118
45- 59	004	004	005	018	014	018	010	001					74
60- 74	001	009	013	017	029	015	009						93
75- 89	003		006	015	028	020	004	001					77
90-104		009	004	021	044	029	006						113
105-119		001	001	027	049	026	004						108
120-134		006	009	043	054	017	002						131
135-149		001	016	033	044	013	001						108
150-164	001	003	018	038	030	022	002	001					115
165-179		003	016	026	037	015	002	003	001				103
180-194	004	015	007	035	035	019	006	002	002				125
195-209	001	020	012	012	027	014	007	004					97
210-224		015	015	015	037	027	017	004	001				131
225-239	001	026	012	018	022	029	016	002					126
240-254	003	037	019	025	043	028	010	001					166
255-269	004	036	036	044	050	033	006	001					210
270-284	009	039	039	045	028	019	002						181
285-299	006	034	026	027	023	011	005						132
300-314	008	023	015	023	029	015	004						117
315-329	012	030	019	026	024	013	003						127
330-344	005	035	019	023	019	009	004						114
345-359		026	032	031	015	010	009						123
	62	463		741		153		4		0			3019
	470		652		452		22		0		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 30/11/71

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
8	0	0	
24	1	0	
40	3	0	*
56	21	1	*****
72	37	1	*********
88	72	2	******************
104	78	3	********************
120	96	3	************************
136	129	4	**********************************
152	95	3	************************
168	90	3	**********************
184	99	3	*************************
200	94	3	************************
216	106	4	***************************
232	95	3	************************
248	72	2	******************
264	97	3	************************
280	110	4	****************************
296	166	5	***
312	186	6	**
328	156	5	**
344	172	6	**
360	154	5	***
376	151	5	***
392	139	5	*************************************
408	119	4	*******************************
424	98	3	*************************
440	71	2	******************
456	72	2	******************
472	61	2	****************
488	51	2	************
504	43	1	**********
520	31	1	********
536	22	1	******
552	9	0	**
568	3	0	*
584	8	0	**
600	2	0	*
616	4	0	*
632	2	0	*

NO. OF SAMPLES OVER 640 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3019
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 30/11/71

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30	60	90	120	150
5	106	4	**********				
15	103	3	**********				
25	133	4	**********				
35	81	3	**********				
45	59	2	**********				
55	44	1	**********				
65	57	2	**********				
75	65	2	**********				
85	50	2	**********				
95	74	2	**********				
105	74	2	**********				
115	77	3	**********				
125	88	3	**********				
135	73	2	**********				
145	74	2	**********				
155	75	2	**********				
165	73	2	**********				
175	70	2	**********				
185	83	3	**********				
195	78	3	**********				
205	60	2	**********				
215	83	3	**********				
225	94	3	**********				
235	85	3	**********				
245	103	3	**********				
255	132	4	**********				
265	147	5	**********				
275	125	4	**********				
285	110	4	**********				
295	73	2	**********				
305	75	2	**********				
315	88	3	**********				
325	74	2	**********				
335	79	3	**********				
345	88	3	**********				
355	66	2	**********				
365	0	0					
375	0	0					
385	0	0					
395	0	0					

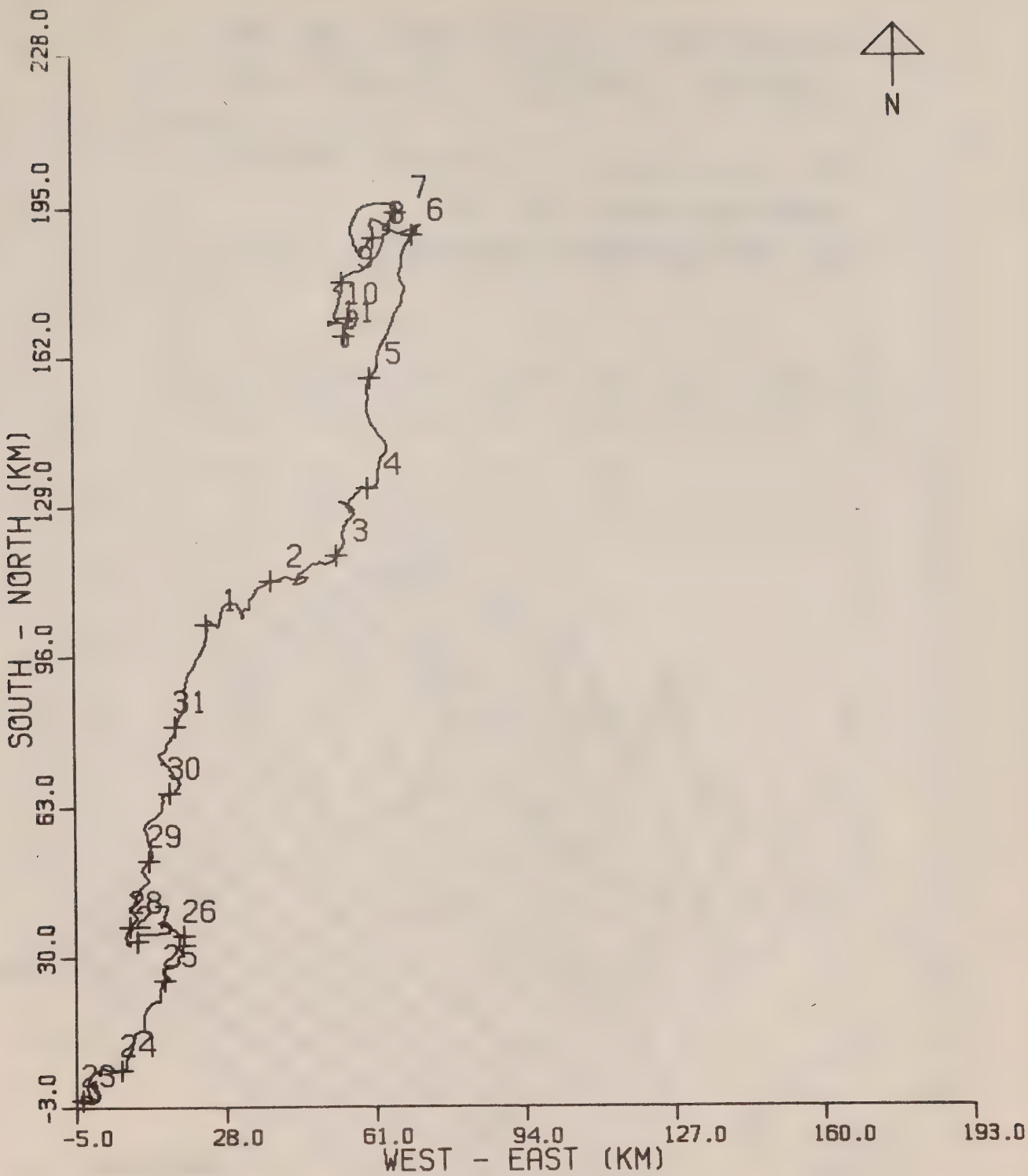
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3019
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 30/11/71

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	50 100 150 200 250
6.14	0	0	
6.22	3	0	*
6.30	1	0	
6.38	3	0	*
6.46	10	0	**
6.54	4	0	*
6.62	8	0	**
6.70	6	0	*
6.78	2	0	
6.86	9	0	**
6.94	16	1	***
7.02	53	2	**********
7.10	39	1	********
7.18	169	6	**********************************
7.26	64	2	************
7.34	111	4	**********************
7.42	217	7	**
7.50	217	7	**
7.58	162	5	*********************************
7.66	95	3	*******************
7.74	91	3	******************
7.82	165	5	**********************************
7.90	88	3	******************
7.98	63	2	************
8.06	55	2	**********
8.14	73	2	**************
8.22	131	4	*****************************
8.30	107	4	**********************
8.38	172	6	************************************
8.46	153	5	********************************
8.54	136	5	****************************
8.62	212	7	**
8.70	65	2	************
8.78	85	3	*****************
8.86	58	2	**********
8.94	47	2	*********
9.02	125	4	**************************
9.10	2	0	
9.18	0	0	
9.26	0	0	

NO. OF SAMPLES OVER 9.30 = 0
NO. OF SAMPLES UNDER 6.10 = 2
TOTAL NO. OF OBSERVATIONS = 3019
SAMPLE INTERVAL = 10 MINUTES



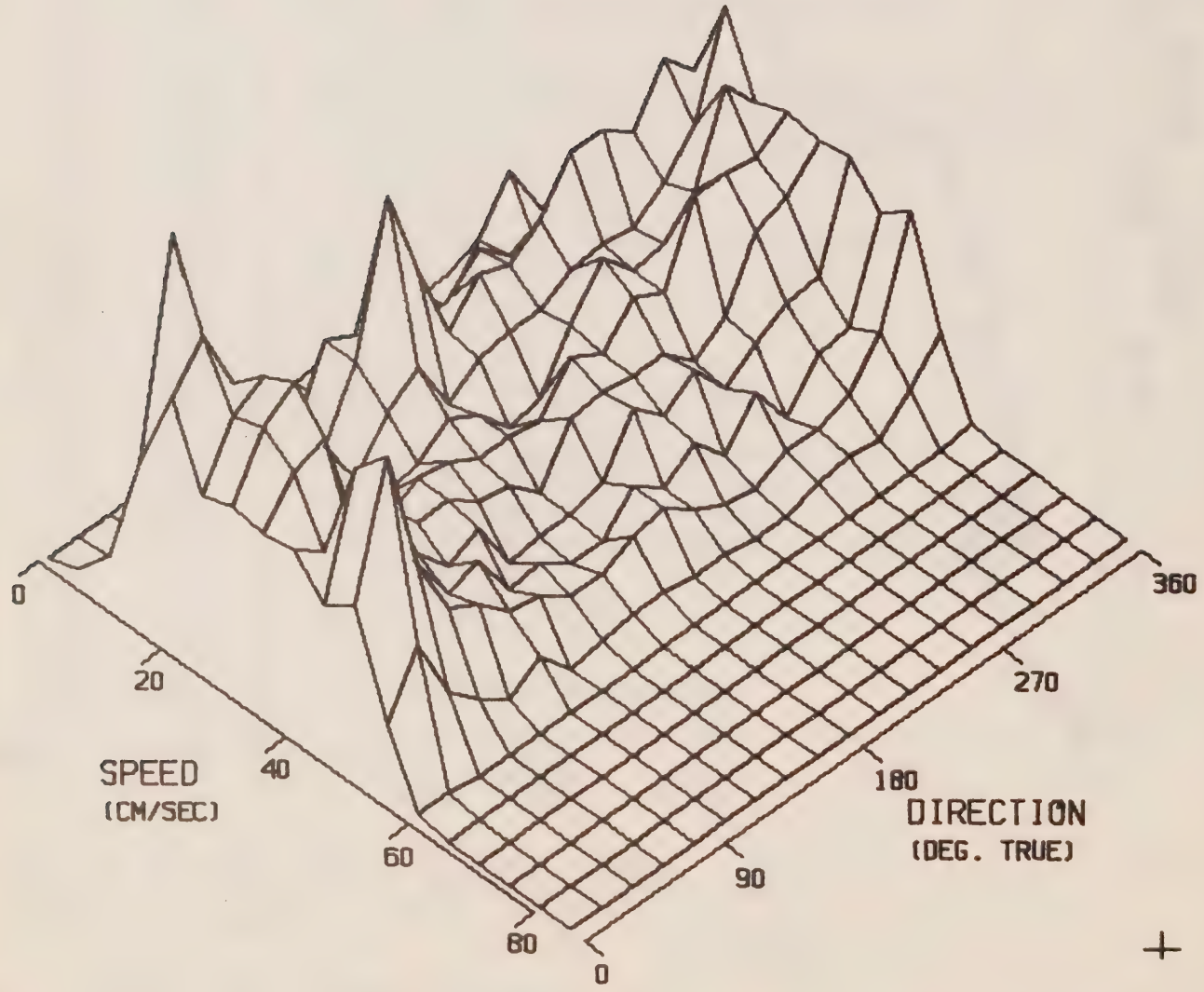
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 22/ 3/72 FNDING DATE: 11/ 4/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 22/ 3/72
NO. OF SAMPLES = 2873



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE:22/ 3/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	002	025	052	040	042	038	042	004					245
15- 29		034	064	050	044	056	050	004					302
30- 44		040	046	075	038	035	028	001					263
45- 59	001	019	025	043	032	022	023						165
60- 74	001	014	027	029	017	016	016						120
75- 89	001	010	017	025	023	012	009						97
90-104	002	014	009	017	016	014	012	001					85
105-119	002	010	006	015	018	014	005						70
120-134		009	010	014	016	009	006						64
135-149	001	024	016	010	008	006	006						71
150-164	003	039	028	017	008	008	004						107
165-179		027	012	013	008	005	003						68
180-194		018	011	014	007	006	010						66
195-209		012	014	007	013	009	005						60
210-224		019	013	013	020	010	005						80
225-239		021	015	014	014	011	001						76
240-254	004	021	013	024	012	009	002						85
255-269	009	014	030	030	016	007	001						107
270-284	014	030	020	019	009	008	003						103
285-299	011	011	010	028	011	010	006						87
300-314	006	025	023	036	018	004	003						115
315-329	004	019	026	024	023	014	007						117
330-344	007	008	032	046	031	013	013	001					151
345-359		020	049	036	027	019	018						169
	68	483	568	639	471	355	278	11	0	0	0	0	2873

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 22/03/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
8	0	0	
24	0	0	
40	4	0	*
56	28	1	*******
72	36	1	*********
88	59	2	**********
104	59	2	**********
120	80	3	**********
136	148	5	**********
152	137	5	**********
168	141	5	**********
184	113	4	**********
200	109	4	**********
216	129	4	**********
232	115	4	**********
248	77	3	**********
264	131	5	**********
280	116	4	**********
296	133	5	**********
312	143	5	**********
328	112	4	**********
344	113	4	**********
360	109	4	**********
376	74	3	**********
392	77	3	**********
408	45	2	**********
424	66	2	**********
440	66	2	**********
456	76	3	**********
472	88	3	**********
488	90	3	**********
504	74	3	**********
520	53	2	**********
536	38	1	**********
552	27	1	*******
568	5	0	*
584	1	0	
600	1	0	
616	0	0	
632	0	0	

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2873
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 22/03/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	175	6	**********
15	190	7	**********
25	201	7	**********
35	179	6	**********
45	136	5	********
55	108	4	******
65	77	3	****
75	70	2	****
85	64	2	****
95	55	2	***
105	52	2	***
115	46	2	***
125	38	1	***
135	45	2	***
145	55	2	***
155	67	2	****
165	58	2	***
175	44	2	***
185	46	2	***
195	41	1	***
205	45	2	***
215	50	2	***
225	54	2	***
235	46	2	***
245	63	2	****
255	73	3	****
265	57	2	***
275	77	3	****
285	57	2	***
295	66	2	****
305	72	3	****
315	68	2	****
325	90	3	*****
335	99	3	*****
345	108	4	******
355	101	4	*****
365	0	0	
375	0	0	
385	0	0	
395	0	0	

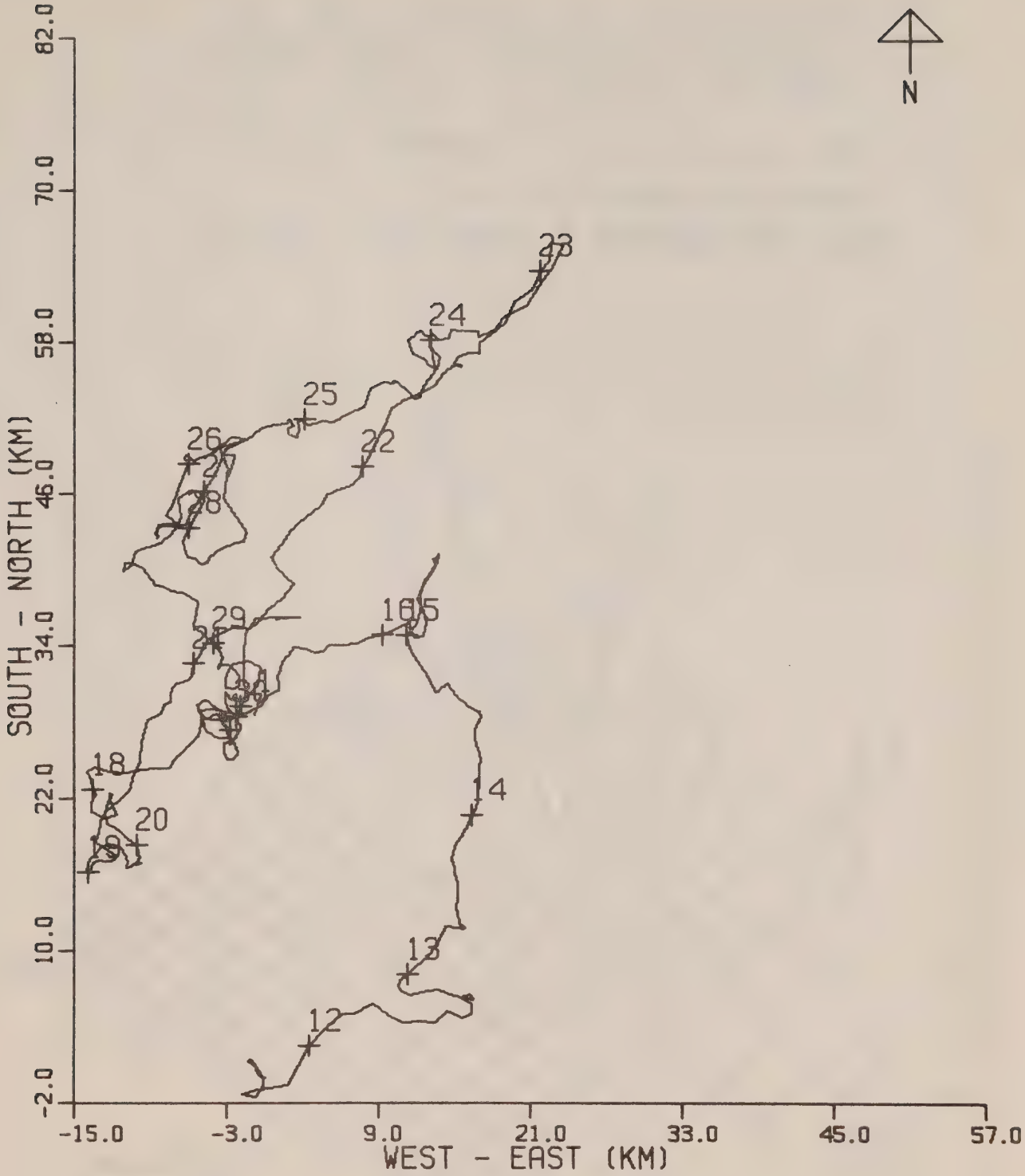
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2873
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 22/03/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	60 120 180 240 300
6.22	0	0	
6.26	0	0	
6.30	0	0	
6.34	0	0	
6.38	3	0	*
6.42	96	3	**********
6.46	58	2	**********
6.50	192	7	**********
6.54	265	9	**********
6.58	204	7	**********
6.62	253	9	**********
6.66	40	1	*******
6.70	128	4	**********
6.74	153	5	**********
6.78	63	2	**********
6.82	170	6	**********
6.86	123	4	**********
6.90	186	6	**********
6.94	59	2	**********
6.98	63	2	**********
7.02	174	6	**********
7.06	56	2	**********
7.10	41	1	*******
7.14	19	1	***
7.18	40	1	*******
7.22	16	1	***
7.26	36	1	******
7.30	26	1	****
7.34	33	1	******
7.38	30	1	*****
7.42	31	1	*****
7.46	48	2	********
7.50	33	1	******
7.54	47	2	********
7.58	60	2	**********
7.62	45	2	********
7.66	66	2	**********
7.70	13	0	**
7.74	3	0	*
7.78	0	0	

NO. OF SAMPLES OVER 7.80 = 0
NO. OF SAMPLES UNDER 6.20 = 0
TOTAL NO. OF OBSERVATIONS = 2873
SAMPLE INTERVAL = 10 MINUTES



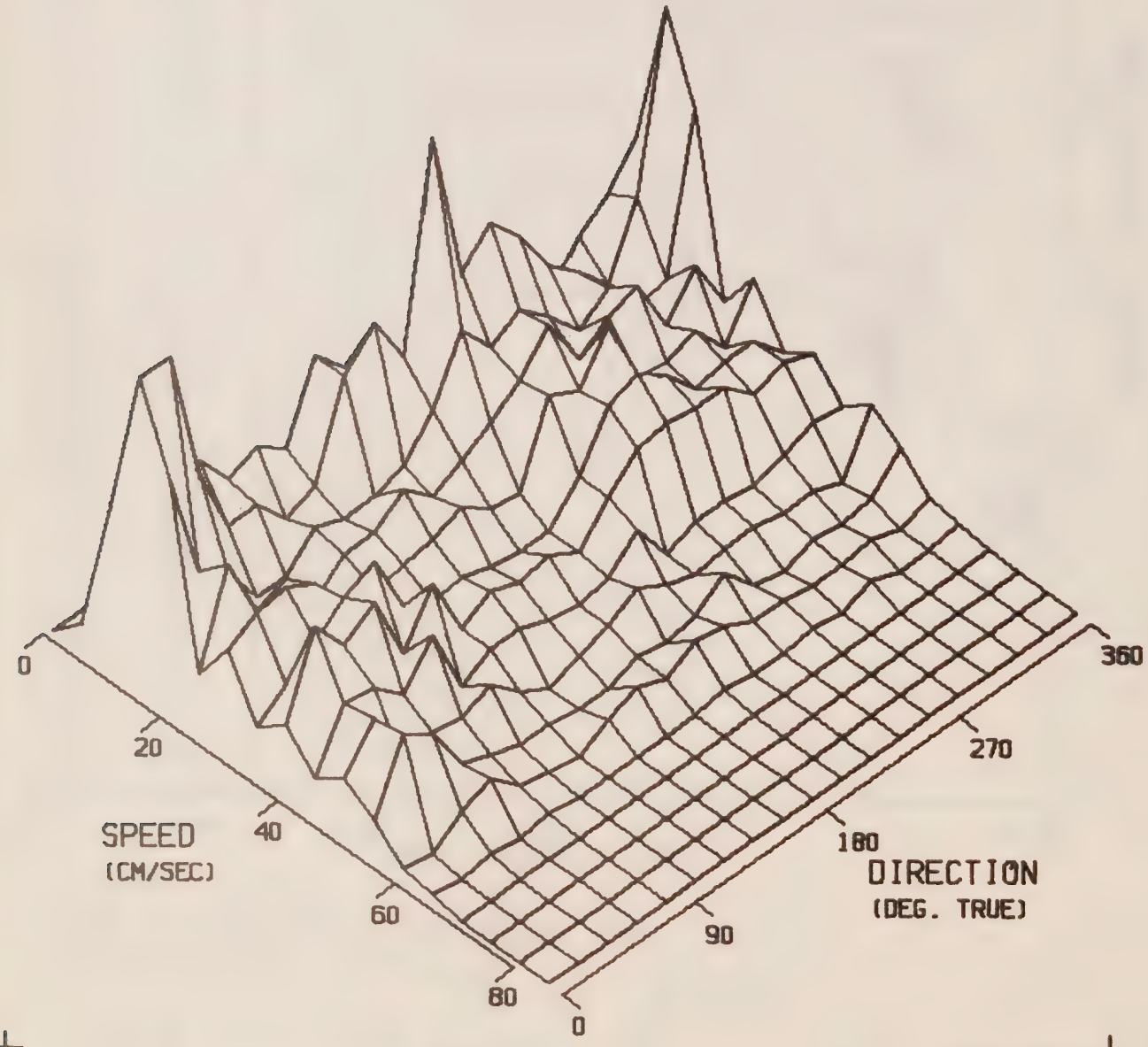
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 11/ 4/72 ENDING DATE: 1/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 11/ 4/72
NO. OF SAMPLES = 2891



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE:11/ 4/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	007	043	047	021	015	017	016	003					169
15- 29	004	065	032	031	020	022	024	006					204
30- 44	003	034	027	027	023	023	013	006					156
45- 59	001	029	013	027	027	018	006	005	001				127
60- 74	004	028	010	019	024	019	013	005					122
75- 89	001	027	018	011	017	018	005	005					102
90-104	002	019	018	019	015	011	008						92
105-119	008	015	021	015	014	012	005	002					92
120-134	007	021	011	018	010	009	002						78
135-149	008	047	016	018	013	011	002	003					118
150-164		045	026	018	008	007	002	003					109
165-179	002	031	022	014	009	008	003	005					94
180-194		031	029	012	010	008	009	003					102
195-209		049	043	022	009	010	004	005	001				143
210-224	001	037	029	023	010	014	003	006					123
225-239		030	034	041	017	011	004	003					140
240-254	001	036	026	023	033	010	006	004					139
255-269	001	037	028	034	025	011	003	003					142
270-284	001	024	025	024	025	012	003						114
285-299	001	018	019	025	016	010	003	002					94
300-314	002	019	026	026	020	009	002	002	001				107
315-329	003	024	013	019	016	010	002	001					88
330-344	001	028	017	019	014	009	002	001					91
345-359	004	045	040	019	015	017	004	001					145
	62	782	590	525	405	306	144	74	3	0	0	0	2891

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 11/04/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
8	0	0	
24	0	0	
40	6	0	*
56	23	1	*****
72	33	1	*******
88	89	3	*******************
104	146	5	*********************************
120	183	6	**
136	181	6	**
152	183	6	**
168	153	5	*********************************
184	137	5	*****************************
200	116	4	************************
216	101	3	**********************
232	117	4	************************
248	69	2	***************
264	118	4	*************************
280	115	4	************************
296	84	3	******************
312	105	4	**********************
328	71	2	***************
344	88	3	*******************
360	88	3	*******************
376	101	3	**********************
392	77	3	****************
408	63	2	**************
424	78	3	*****************
440	54	2	************
456	49	2	**********
472	42	1	********
488	32	1	******
504	38	1	********
520	23	1	*****
536	29	1	******
552	30	1	******
568	14	0	***
584	25	1	*****
600	15	1	***
616	8	0	**
632	4	0	*

NO. OF SAMPLES OVER 640 = 3
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2891
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 11/04/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	121	4	**********
15	111	4	**********
25	158	5	**********
35	100	3	**********
45	86	3	**********
55	91	3	**********
65	80	3	**********
75	66	2	**********
85	71	2	**********
95	56	2	**********
105	72	2	**********
115	60	2	**********
125	51	2	**********
135	66	2	**********
145	79	3	**********
155	77	3	**********
165	61	2	**********
175	62	2	**********
185	69	2	**********
195	86	3	**********
205	94	3	**********
215	83	3	**********
225	87	3	**********
235	94	3	**********
245	97	3	**********
255	91	3	**********
265	92	3	**********
275	84	3	**********
285	57	2	**********
295	65	2	**********
305	72	2	**********
315	60	2	**********
325	61	2	**********
335	53	2	**********
345	85	3	**********
355	93	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

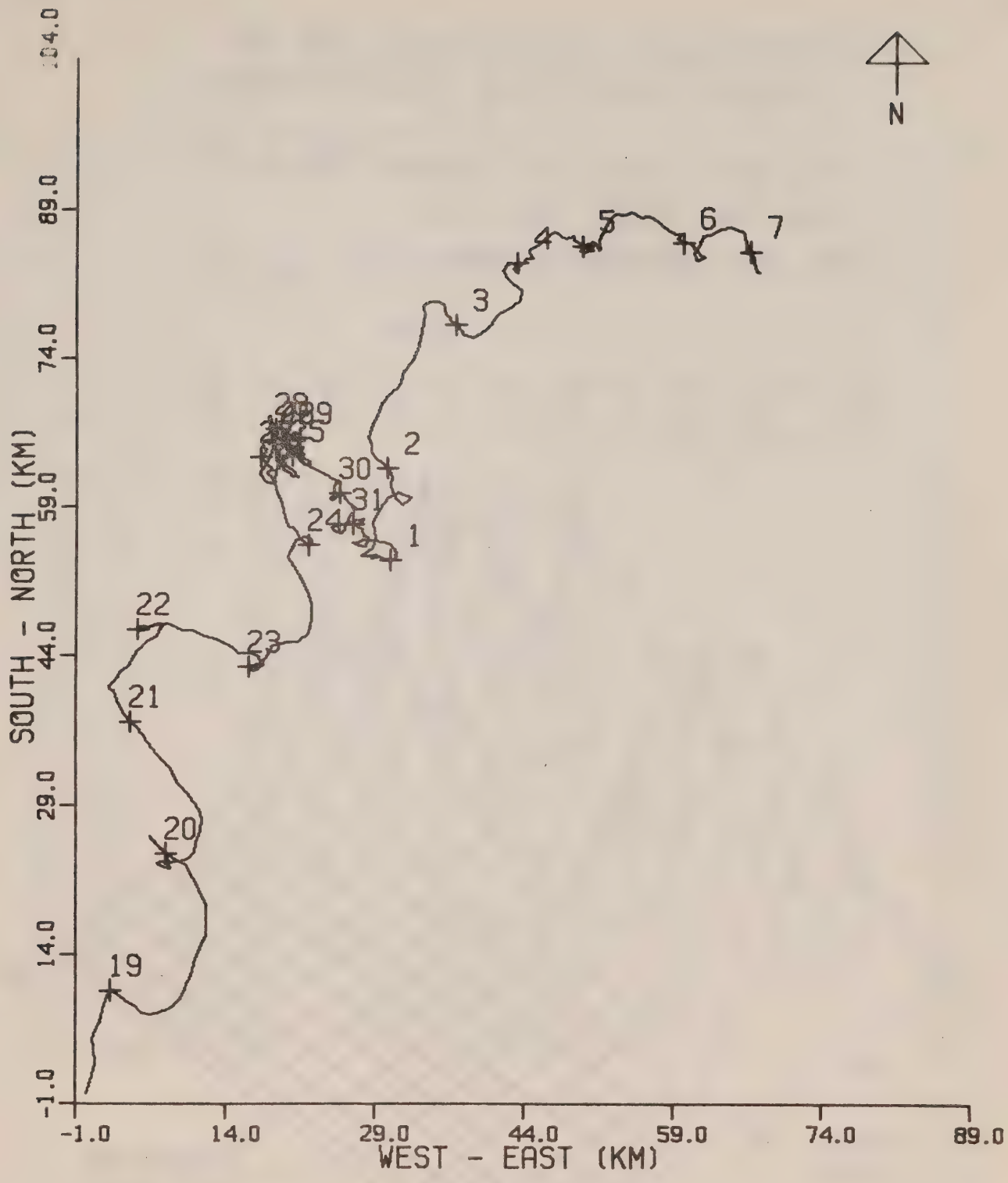
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2891
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 11/04/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	100 200 300 400 500
6.81	0	0	
6.83	3	0	
6.85	0	0	
6.87	6	0	*
6.89	9	0	*
6.91	29	1	***
6.93	52	2	*****
6.95	0	0	
6.97	124	4	**********
6.99	237	8	**********
7.01	445	15	**********
7.03	323	11	**********
7.05	0	0	
7.07	282	10	**********
7.09	185	6	**********
7.11	147	5	**********
7.13	79	3	********
7.15	0	0	
7.17	85	3	*********
7.19	58	2	******
7.21	101	3	**********
7.23	0	0	
7.25	131	5	**********
7.27	104	4	**********
7.29	65	2	*******
7.31	58	2	******
7.33	0	0	
7.35	79	3	********
7.37	52	2	*****
7.39	51	2	*****
7.41	55	2	******
7.43	0	0	
7.45	63	2	******
7.47	31	1	***
7.49	16	1	**
7.51	0	0	
7.53	9	0	*
7.55	8	0	*
7.57	2	0	
7.59	1	0	

NO. OF SAMPLES OVER 7.60 = 1
NO. OF SAMPLES UNDER 6.80 = 0
TOTAL NO. OF OBSERVATIONS = 2891
SAMPLE INTERVAL = 10 MINUTES



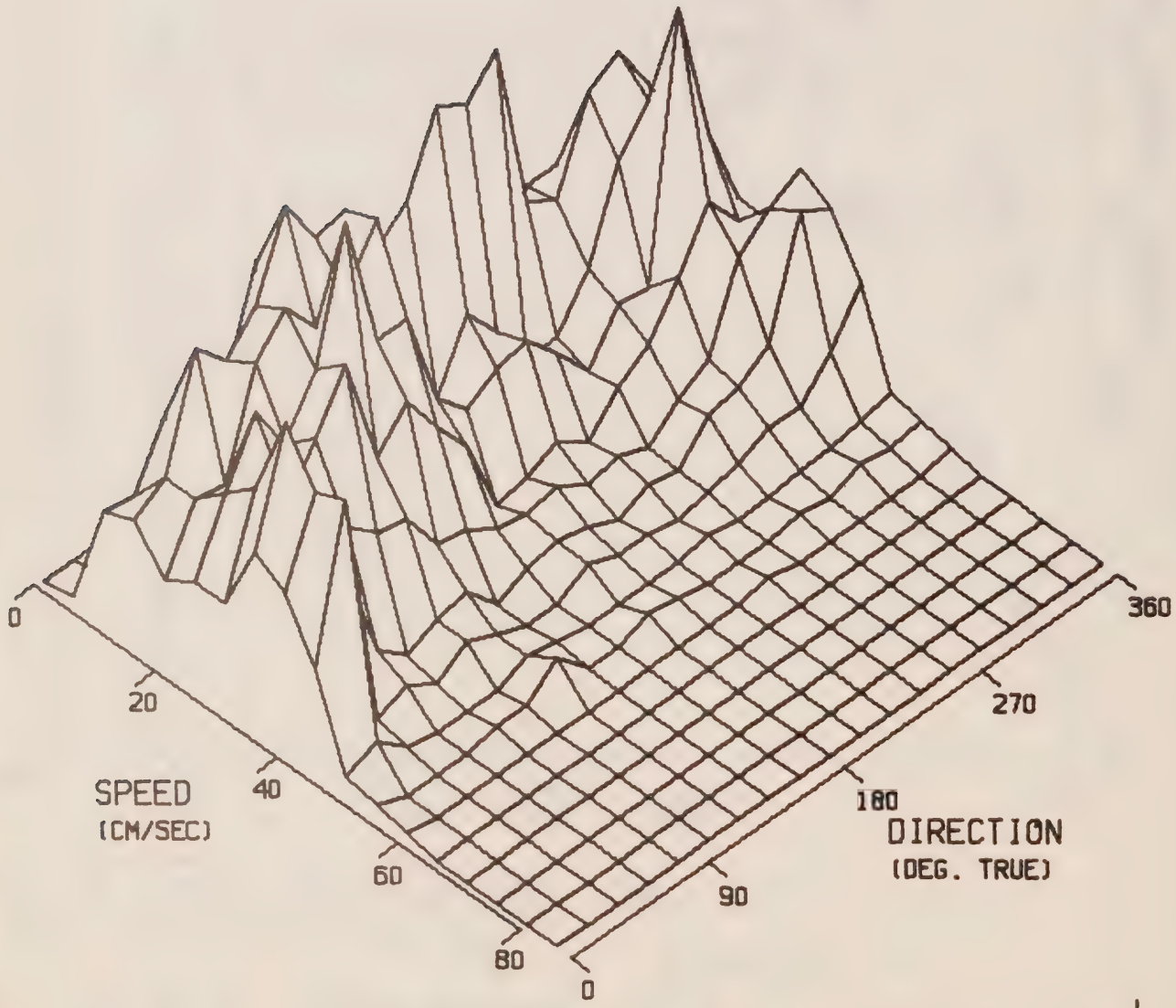
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 18/ 7/72 ENDING DATE: 7/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 18/ 7/72
NO. OF SAMPLES = 2830



STN. NO. HS=4 DEPTH 10 M.

STARTING DATE:18/ 7/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0= 14	001	026	019	024	035	026	003						134
15= 29	001	024	021	037	049	050	002						184
30= 44		038	023	042	029	012	001						145
45= 59	001	036	041	030	024	006							138
60= 74		040	036	049	021	004							150
75= 89		039	042	037	016	001	001						136
90=104		051	043	042	019	004							159
105=119	008	057	046	044	013	002	004						174
120=134	007	035	042	028	010	003	004						129
135=149	008	035	052	037	004		001						137
150=164		040	036	025	006								107
165=179		042	016	009	007	001	002						77
180=194	001	041	019	009	002	003							75
195=209	001	050	021	014	006	001		001					94
210=224		046	029	013	002	002							92
225=239	005	047	016	006	004		001	001					80
240=254	001	042	015	010	002								70
255=269	003	021	010	007	002								43
270=284	002	026	020	015	005	004	001						73
285=299	004	035	025	015	004	004							87
300=314	003	028	036	030	013	007	001						118
315=329	002	039	041	044	021	008	003						158
330=344	004	026	034	037	028	020		001					150
345=359	001	024	026	017	028	019	003	001					119
	53	888	709	621	350	177	27	4	0	0	0		2829

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 18/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60 120 180 240 300
7	0	0	
21	0	0	
35	1	0	
49	12	0	**
63	23	1	****
77	30	1	*****
91	101	4	******************
105	136	5	************************
119	198	7	************************************
133	170	6	******************************
147	232	8	**
161	124	4	**********************
175	99	3	******************
189	144	5	**************************
203	116	4	********************
217	154	5	***************************
231	110	4	********************
245	94	3	*****************
259	157	6	****************************
273	123	4	**********************
287	110	4	********************
301	75	3	**************
315	90	3	*****************
329	74	3	*************
343	58	2	**********
357	85	3	***************
371	41	1	*******
385	59	2	**********
399	27	1	*****
413	35	1	******
427	45	2	********
441	25	1	****
455	33	1	******
469	13	0	**
483	10	0	**
497	4	0	*
511	1	0	
525	4	0	*
539	4	0	*
553	8	0	*

NO. OF SAMPLES OVER 560 = 5
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2830
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 18/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	87	3	**********
15	110	4	**********
25	130	5	**********
35	100	4	**********
45	94	3	**********
55	83	3	**********
65	96	3	**********
75	108	4	**********
85	89	3	**********
95	102	4	**********
105	124	4	**********
115	108	4	**********
125	86	3	**********
135	93	3	**********
145	90	3	**********
155	73	3	**********
165	56	2	**********
175	43	2	**********
185	50	2	**********
195	59	2	**********
205	63	2	**********
215	66	2	**********
225	49	2	**********
235	59	2	**********
245	46	2	**********
255	37	1	**********
265	30	1	**********
275	48	2	**********
285	49	2	**********
295	68	2	**********
305	71	3	**********
315	94	3	**********
325	109	4	**********
335	96	3	**********
345	96	3	**********
355	68	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2830
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 18/07/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 40 80 120 160 200
9.26	12	0	***
9.38	17	1	****
9.50	34	1	*********
9.62	48	2	************
9.74	54	2	**************
9.86	68	2	******************
9.98	121	4	*********************************
10.10	99	3	**************************
10.22	101	4	***************************
10.34	85	3	**********************
10.46	109	4	*****************************
10.58	135	5	************************************
10.70	106	4	****************************
10.82	84	3	**********************
10.94	48	2	************
11.06	139	5	*************************************
11.18	129	5	**********************************
11.30	152	5	**
11.42	108	4	****************************
11.54	68	2	******************
11.66	92	3	************************
11.78	76	3	********************
11.90	95	3	*************************
12.02	73	3	********************
12.14	40	1	**********
12.26	58	2	***************
12.38	55	2	**************
12.50	106	4	****************************
12.62	83	3	**********************
12.74	52	2	*************
12.86	89	3	************************
12.98	54	2	**************
13.10	61	2	****************
13.22	42	1	***********
13.34	20	1	*****
13.46	24	1	******
13.58	30	1	********
13.70	15	1	****
13.82	7	0	**
13.94	13	0	***

NO. OF SAMPLES OVER 14.00 = 28
NO. OF SAMPLES UNDER 9.20 = 0
TOTAL NO. OF OBSERVATIONS = 2830
SAMPLE INTERVAL = 10 MINUTES



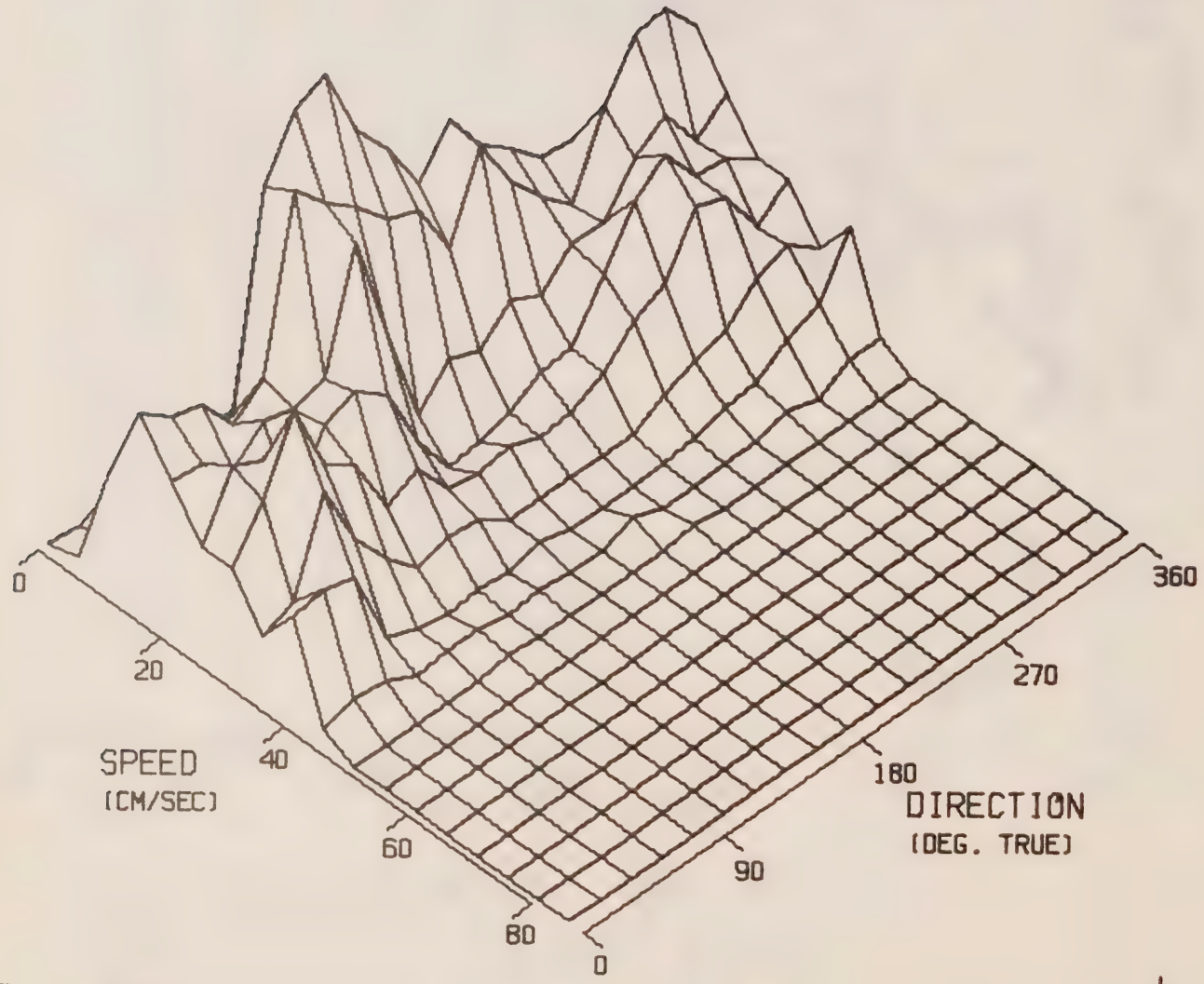
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 7/ 8/72 ENDING DATE: 31/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 7/ 8/72
NO. OF SAMPLES = 3498



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE: 7/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	003	043	055	038	020	012							171
15- 29	002	032	044	042	030	015							165
30- 44	005	037	040	054	040	014							190
45- 59	001	040	038	034	032	003							148
60- 74	006	027	035	040	019	004							131
75- 89	008	032	041	040	010	002							133
90-104	009	081	053	033	007	001							184
105-119	014	100	054	035	007	001	001						212
120-134	014	098	064	028	006								210
135-149	019	092	036	008	005	001							161
150-164	007	076	018	009	004	001							115
165-179	008	085	015	005	002								115
180-194	004	071	020	007	002								104
195-209	002	055	018	010	001	003							89
210-224	012	067	029	008	002								118
225-239	014	066	031	014	001		001						127
240-254	008	044	024	014	001								91
255-269	007	049	026	029	006	001							118
270-284	006	040	029	027	008	002							112
285-299	011	037	040	053	009	002							152
300-314	011	048	048	042	017	002							168
315-329	012	047	050	041	019								169
330-344	009	049	043	035	023	005							164
345-359	004	044	032	037	024	010							151
	196	883		295		2	0		0				3498
	1360		683		79		0	0		0			

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 07/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70	140	210	280	350
6	0	0					
18	8	0	*				
30	9	0	*				
42	15	0	**				
54	42	1	******				
66	81	2	**********				
78	88	3	**********				
90	166	5	**********				
102	217	6	**********				
114	219	6	**********				
126	256	7	**********				
138	210	6	**********				
150	185	5	**********				
162	169	5	**********				
174	143	4	**********				
186	148	4	**********				
198	157	4	**********				
210	136	4	**********				
222	107	3	**********				
234	111	3	**********				
246	82	2	**********				
258	108	3	**********				
270	99	3	**********				
282	115	3	**********				
294	106	3	**********				
306	88	3	**********				
318	83	2	**********				
330	81	2	**********				
342	51	1	*******				
354	37	1	*****				
366	35	1	*****				
378	26	1	****				
390	39	1	******				
402	20	1	***				
414	18	1	***				
426	14	0	**				
438	9	0	*				
450	7	0	*				
462	9	0	*				
474	2	0					

NO. OF SAMPLES OVER 480 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3498
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 07/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	123	4	**********
15	115	3	**********
25	107	3	**********
35	131	4	**********
45	123	4	**********
55	82	2	**********
65	87	2	**********
75	87	2	**********
85	90	3	**********
95	119	3	**********
105	134	4	**********
115	150	4	**********
125	135	4	**********
135	127	4	**********
145	100	3	**********
155	77	2	**********
165	80	2	**********
175	74	2	**********
185	75	2	**********
195	58	2	**********
205	58	2	**********
215	78	2	**********
225	89	3	**********
235	82	2	**********
245	60	2	**********
255	75	2	**********
265	77	2	**********
275	77	2	**********
285	82	2	**********
295	103	3	**********
305	110	3	**********
315	106	3	**********
325	123	4	**********
335	96	3	**********
345	120	3	**********
355	88	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

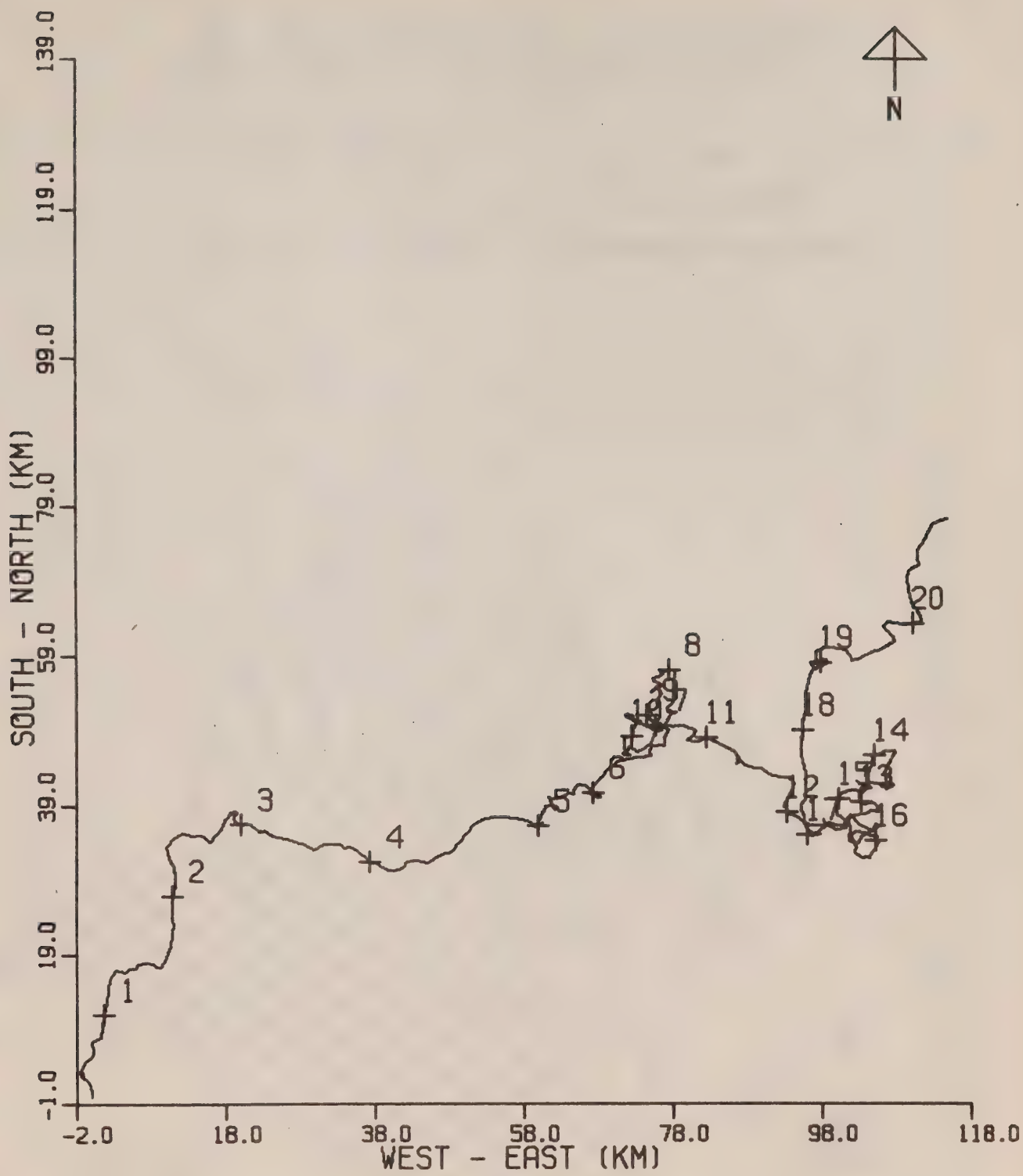
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3498
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 07/08/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	70 / 140 / 210 / 280 / 350
8.85	0	0	
8.95	0	0	
9.05	0	0	
9.15	1	0	
9.25	30	1	****
9.35	21	1	***
9.45	17	0	**
9.55	17	0	**
9.65	45	1	******
9.75	96	3	**********
9.85	133	4	**********
9.95	147	4	**********
10.05	133	4	**********
10.15	149	4	**********
10.25	129	4	**********
10.35	193	6	**********
10.45	207	6	**********
10.55	236	7	**********
10.65	254	7	**********
10.75	268	8	**********
10.85	195	6	**********
10.95	164	5	**********
11.05	147	4	**********
11.15	111	3	**********
11.25	119	3	**********
11.35	117	3	**********
11.45	90	3	**********
11.55	123	4	**********
11.65	119	3	**********
11.75	60	2	*********
11.85	57	2	********
11.95	41	1	******
12.05	21	1	***
12.15	28	1	****
12.25	18	1	***
12.35	9	0	*
12.45	3	0	
12.55	0	0	
12.65	0	0	
12.75	0	0	

NO. OF SAMPLES OVER 12.80 = 0
NO. OF SAMPLES UNDER 8.80 = 0
TOTAL NO. OF OBSERVATIONS = 3498
SAMPLE INTERVAL = 10 MINUTES



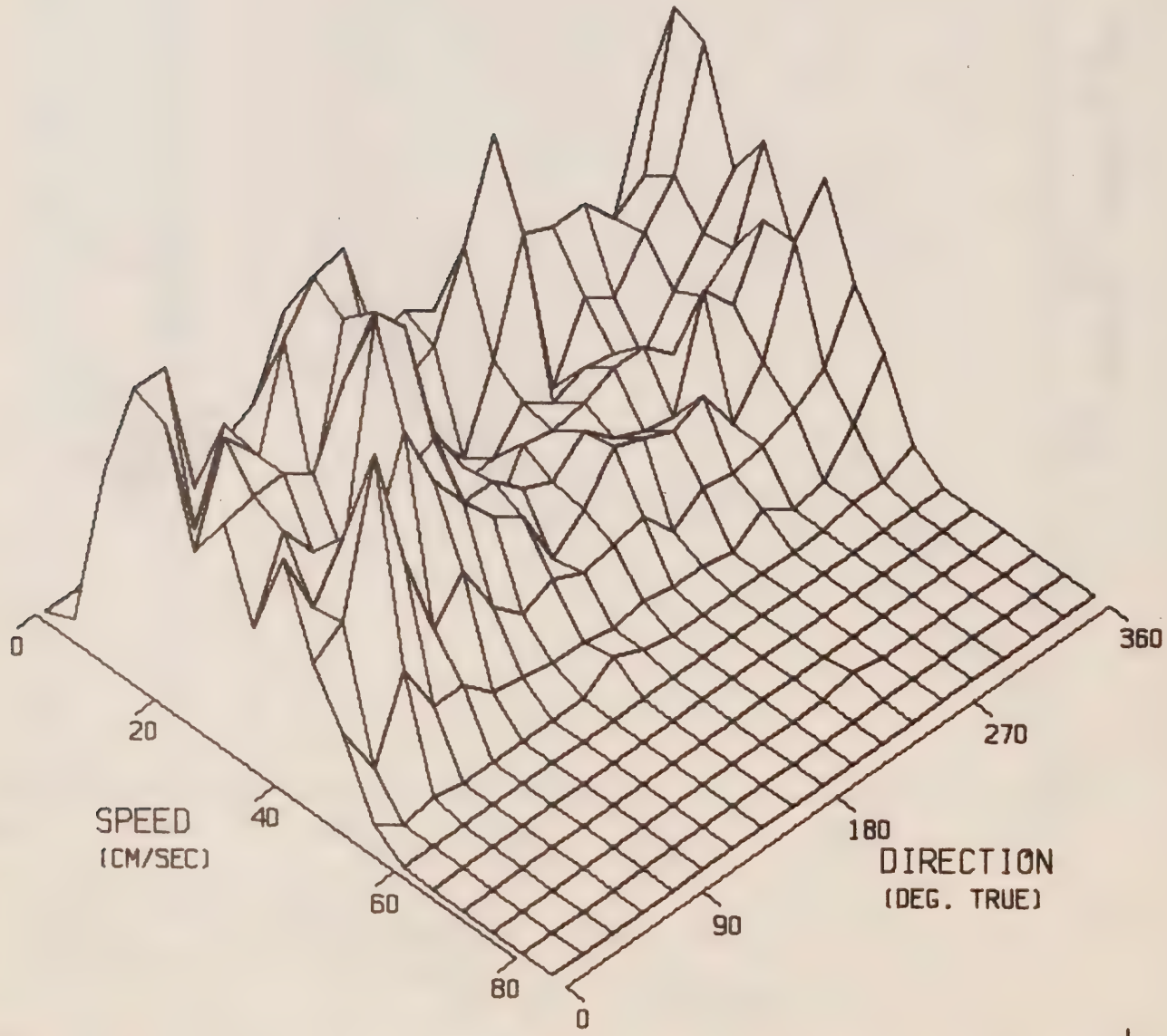
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 31/ 8/72 ENDING DATE: 20/ 9/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN: NO. HS-4 DEPTH 10 M.
STARTING DATE: 31/ 8/72
NO. OF SAMPLES = 2926



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE:31/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	001	038	044	040	030	029	008	001					191
15- 29	003	038	035	044	038	028	002						188
30- 44	001	021	034	039	032	041	012						180
45- 59		024	030	040	023	044	006						167
60- 74		019	021	026	043	024	004						137
75- 89	001	024	047	038	048	022	006						186
90-104	001	034	047	056	037	022	002						199
105-119	002	026	051	051	036	027	004						197
120-134	002	027	049	042	018	018	003						159
135-149	001	022	034	024	016	008	001						106
150-164	002	013	018	012	022	011	003						81
165-179	001	015	013	009	014	010	003						65
180-194	002	025	009	008	008	006	001						59
195-209	001	023	008	013	012	011	001						69
210-224		025	016	008	020	014							83
225-239	002	031	028	016	013	005	001						96
240-254	002	041	024	016	013	006				001			103
255-269		034	008	017	011	008							78
270-284		022	023	016	009	009	002						81
285-299	001	025	010	016	018	005	001						76
300-314	002	017	016	010	017	009							71
315-329	002	019	021	018	015	013	002						90
330-344	003	016	017	018	029	019	006						108
345-359	002	030	037	025	032	024	006						156
	32	640		554		74		0		0			2926
	609		602		413		1		1		0		

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 31/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
8	0	0	
24	0	0	
40	1	0	
56	9	0	**
72	22	1	******
88	56	2	***************
104	102	3	*****************************
120	158	5	**
136	146	5	**
152	147	5	**
168	136	5	**************************************
184	148	5	**
200	142	5	**
216	128	4	************************************
232	109	4	******************************
248	85	3	**********************
264	102	3	*****************************
280	127	4	************************************
296	149	5	**
312	116	4	********************************
328	127	4	************************************
344	116	4	********************************
360	124	4	**********************************
376	110	4	********************************
392	101	3	****************************
408	82	3	**********************
424	95	3	**************************
440	76	3	********************
456	78	3	**********************
472	58	2	****************
488	34	1	*********
504	24	1	******
520	9	0	**
536	6	0	**
552	1	0	
568	1	0	
584	0	0	
600	0	0	
616	0	0	
632	0	0	

NO. OF SAMPLES OVER 640 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2926
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 31/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	156	5	**********
15	112	4	********
25	120	4	*********
35	120	4	*********
45	129	4	**********
55	90	3	*******
65	89	3	*******
75	121	4	*********
85	128	4	**********
95	132	5	**********
105	134	5	**********
115	120	4	*********
125	105	4	********
135	99	3	********
145	61	2	*****
155	50	2	****
165	55	2	*****
175	38	1	***
185	38	1	***
195	39	1	***
205	50	2	****
215	61	2	*****
225	60	2	*****
235	58	2	*****
245	80	3	******
255	50	2	****
265	57	2	*****
275	55	2	*****
285	51	2	****
295	49	2	****
305	49	2	****
315	56	2	*****
325	56	2	*****
335	62	2	*****
345	102	3	********
355	94	3	********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

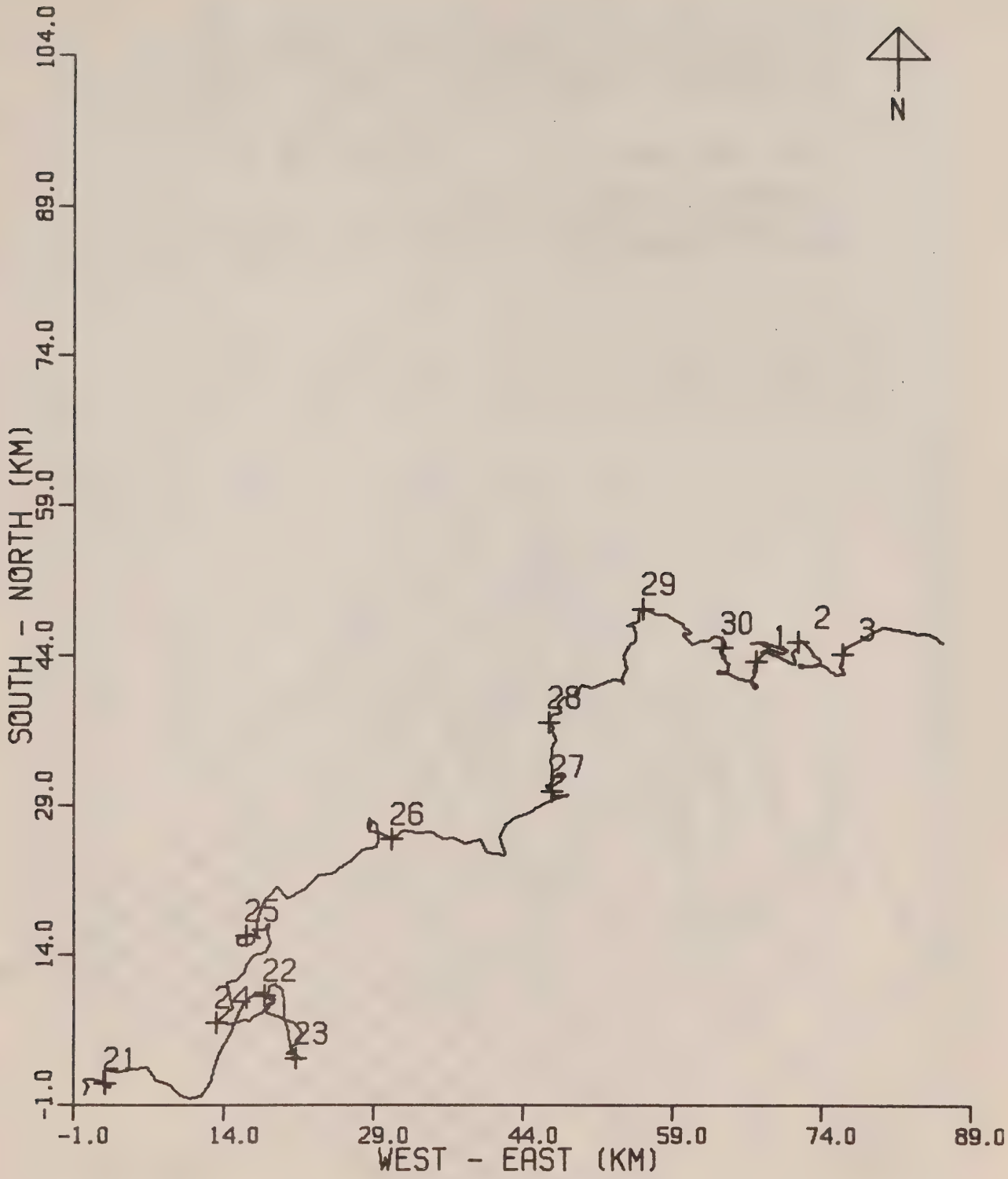
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2926
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 31/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	60 120 180 240 300
9.54	8	0	*
9.62	26	1	****
9.70	33	1	******
9.78	85	3	**********
9.86	109	4	**********
9.94	199	7	**********
10.02	208	7	**********
10.10	202	7	**********
10.18	189	6	**********
10.26	226	8	**********
10.34	217	7	**********
10.42	99	3	**********
10.50	84	3	**********
10.58	59	2	**********
10.66	37	1	******
10.74	38	1	******
10.82	52	2	**********
10.90	53	2	**********
10.98	59	2	**********
11.06	54	2	**********
11.14	65	2	**********
11.22	64	2	**********
11.30	71	2	**********
11.38	79	3	**********
11.46	96	3	**********
11.54	129	4	**********
11.62	90	3	**********
11.70	64	2	**********
11.78	61	2	**********
11.86	21	1	****
11.94	29	1	*****
12.02	30	1	*****
12.10	18	1	***
12.18	14	0	**
12.26	12	0	**
12.34	10	0	**
12.42	18	1	***
12.50	6	0	*
12.58	3	0	*
12.66	1	0	

NO. OF SAMPLES OVER 12.70 = 6
NO. OF SAMPLES UNDER 9.50 = 2
TOTAL NO. OF OBSERVATIONS = 2926
SAMPLE INTERVAL = 10 MINUTES



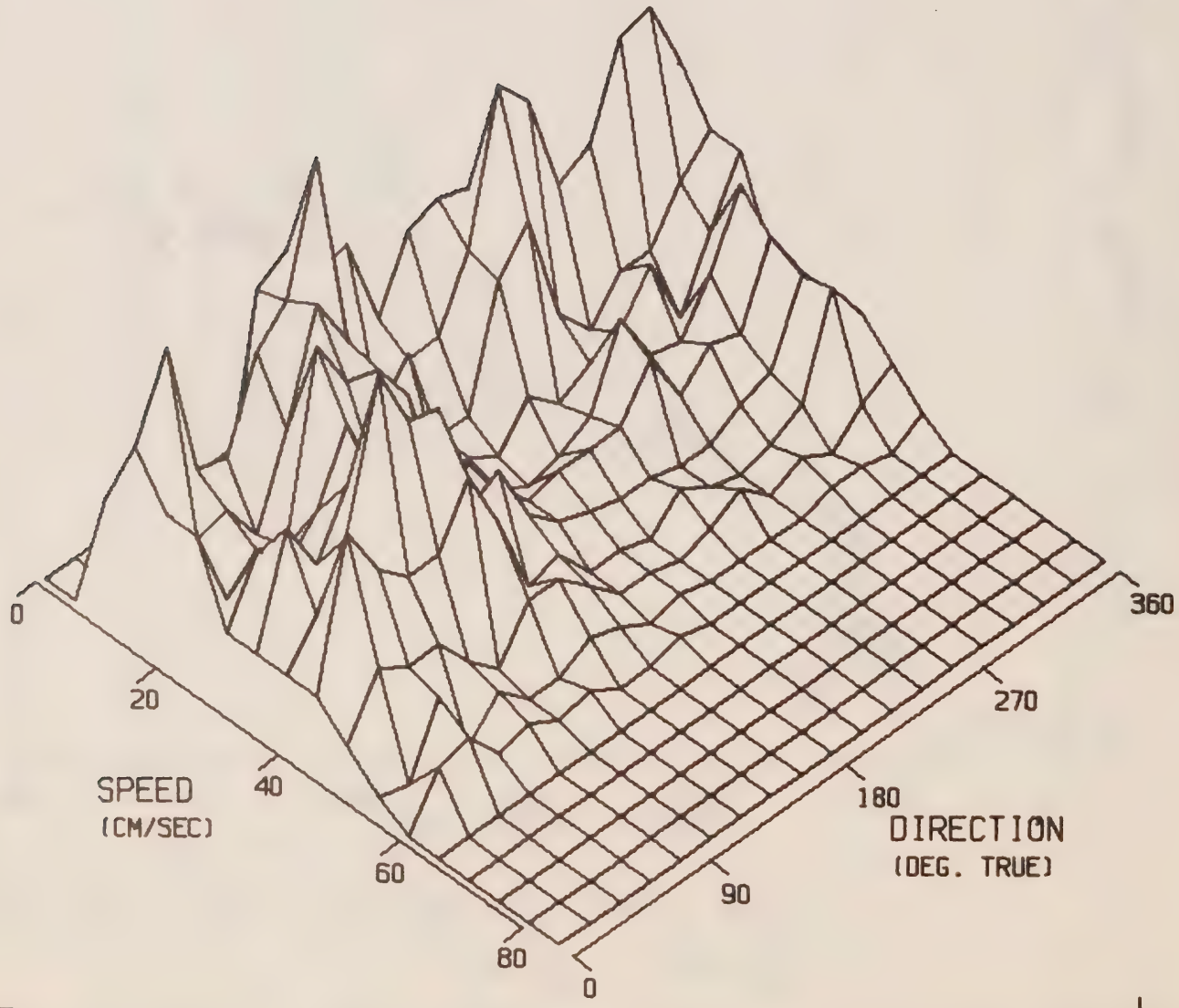
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 20/ 9/72 ENDING DATE: 3/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 20/ 9/72
NO. OF SAMPLES = 1839



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE:20/ 9/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	001	028	016	015	009	011	006						86
15- 29		020	016	011	022	025	011	004					109
30- 44	001	015	017	017	016	023	010	006					105
45- 59		010	010	010	019	016	008	004					77
60- 74		013	016	020	029	030	006	004					118
75- 89	002	016	021	026	022	023	006	001					117
90-104		022	031	019	016	029	002	001					120
105-119	002	043	035	023	015	019	003	002					142
120-134	001	029	019	012	012	016	008						97
135-149	004	025	012	011	007	011	007						77
150-164	003	017	019	009	008	009	004						69
165-179	002	010	007	005	007	003	001	001					36
180-194	002	019	009	002	003	001	001						37
195-209	007	014	003	001	005	002	002						34
210-224		015	019	004	006								44
225-239		034	027	005	007		001						74
240-254		029	015	006	005	003							58
255-269		028	010	010	012	001	002						63
270-284	001	023	007	004	005		001						41
285-299	001	019	014	011	005		002						52
300-314	001	020	006	008	006	002	001						44
315-329	001	029	015	006	007	004	001						63
330-344		029	015	013	017	010	002						86
345-359		023	020	019	015	012	001						90
	29	530	379	267	275	250	86	23	0	0	0		1839

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 20/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40 80 120 160 200
8	0	0	
24	0	0	
40	1	0	
56	3	0	*
72	25	1	******
88	69	4	******************
104	95	5	*************************
120	132	7	**********************************
136	115	6	******************************
152	119	6	*******************************
168	109	6	****************************
184	78	4	*********************
200	83	5	**********************
216	59	3	****************
232	69	4	******************
248	43	2	**********
264	56	3	***************
280	51	3	**************
296	49	3	*************
312	49	3	*************
328	60	3	****************
344	75	4	********************
360	46	3	************
376	49	3	*************
392	61	3	****************
408	54	3	**************
424	49	3	*************
440	52	3	**************
456	47	3	************
472	32	2	********
488	23	1	******
504	30	2	********
520	14	1	****
536	14	1	****
552	7	0	**
568	1	0	
584	12	1	***
600	5	0	*
616	3	0	*
632	0	0	

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1839
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 20/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 20. 40 60 80 100 . . . . .
5	60	3	******************************
15	66	4	********************************
25	78	4	**
35	71	4	**********************************
45	60	3	******************************
55	51	3	**************************
65	73	4	**********************************
75	84	5	**
85	77	4	**********************************
95	75	4	**********************************
105	95	5	**
115	90	5	**
125	68	4	**********************************
135	53	3	**************************
145	51	3	**************************
155	53	3	**************************
165	28	2	**************
175	22	1	**********
185	23	1	**********
195	31	2	****************
205	19	1	**********
215	22	1	**********
225	46	3	**********************
235	46	3	**********************
245	43	2	**********************
255	48	3	************************
265	32	2	****************
275	31	2	****************
285	24	1	**********
295	41	2	********************
305	29	2	**************
315	37	2	******************
325	37	2	******************
335	61	3	******************************
345	69	4	**********************************
355	45	2	**********************
365	0	0	
375	0	0	
385	0	0	
395	0	0	

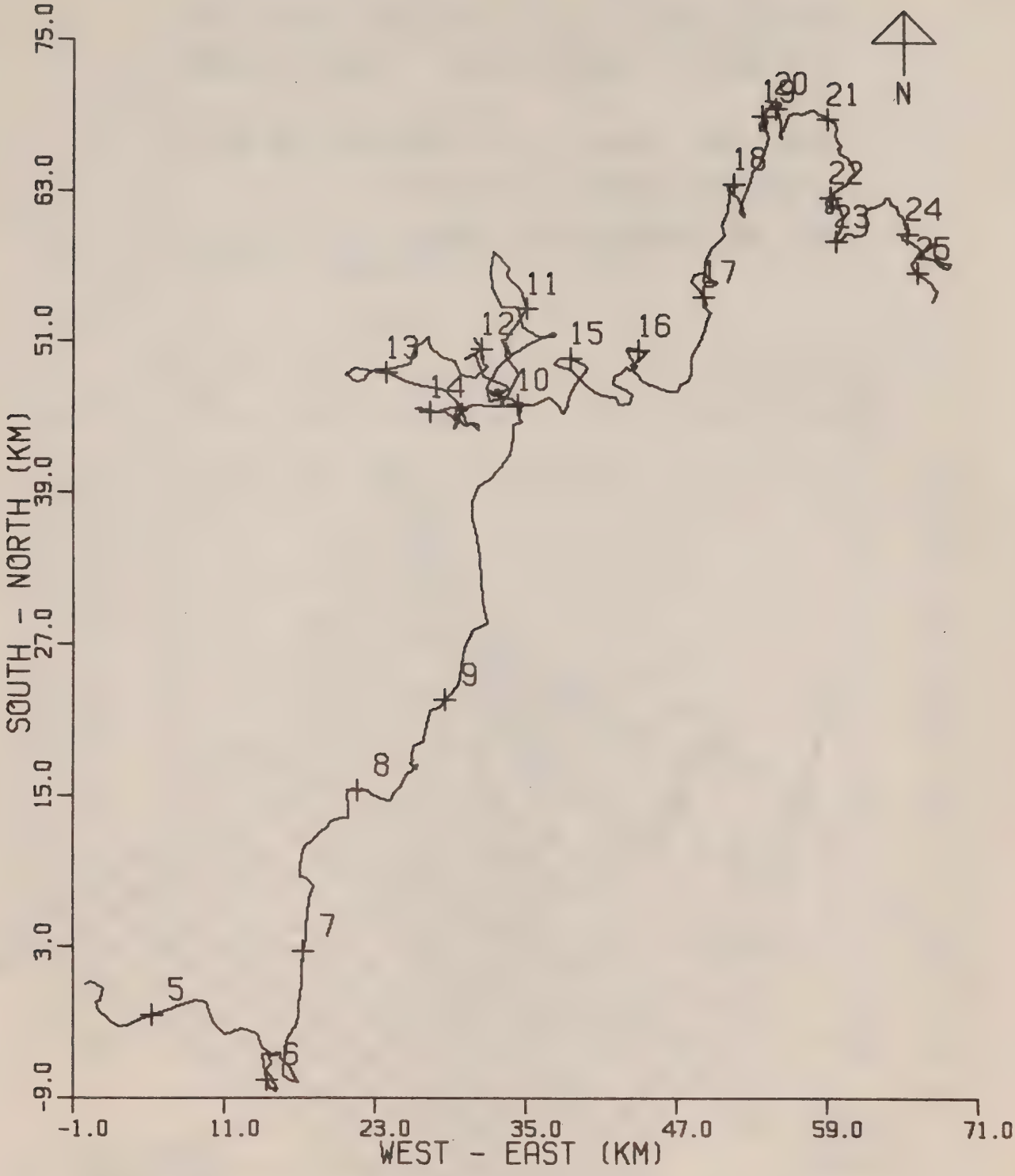
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1839
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 20/09/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 30 . 60 . 90 . 120 . 150 .
9.05	3	0	*
9.15	27	1	*********
9.25	70	4	************************
9.35	75	4	*************************
9.45	69	4	************************
9.55	90	5	*******************************
9.65	81	4	****************************
9.75	125	7	***
9.85	102	6	**********************************
9.95	101	5	**********************************
10.05	108	6	************************************
10.15	93	5	********************************
10.25	85	5	*****************************
10.35	72	4	************************
10.45	74	4	*************************
10.55	45	2	****************
10.65	33	2	************
10.75	31	2	**********
10.85	22	1	*******
10.95	12	1	****
11.05	15	1	*****
11.15	18	1	******
11.25	21	1	*******
11.35	18	1	******
11.45	7	0	**
11.55	10	1	***
11.65	9	0	***
11.75	15	1	*****
11.85	29	2	**********
11.95	17	1	******
12.05	11	1	****
12.15	53	3	******************
12.25	68	4	************************
12.35	71	4	*************************
12.45	88	5	*******************************
12.55	39	2	*************
12.65	30	2	**********
12.75	2	0	*
12.85	0	0	
12.95	0	0	

NO. OF SAMPLES OVER 13.00 = 0
NO. OF SAMPLES UNDER 9.00 = 0
TOTAL NO. OF OBSERVATIONS = 1839
SAMPLE INTERVAL = 10 MINUTES



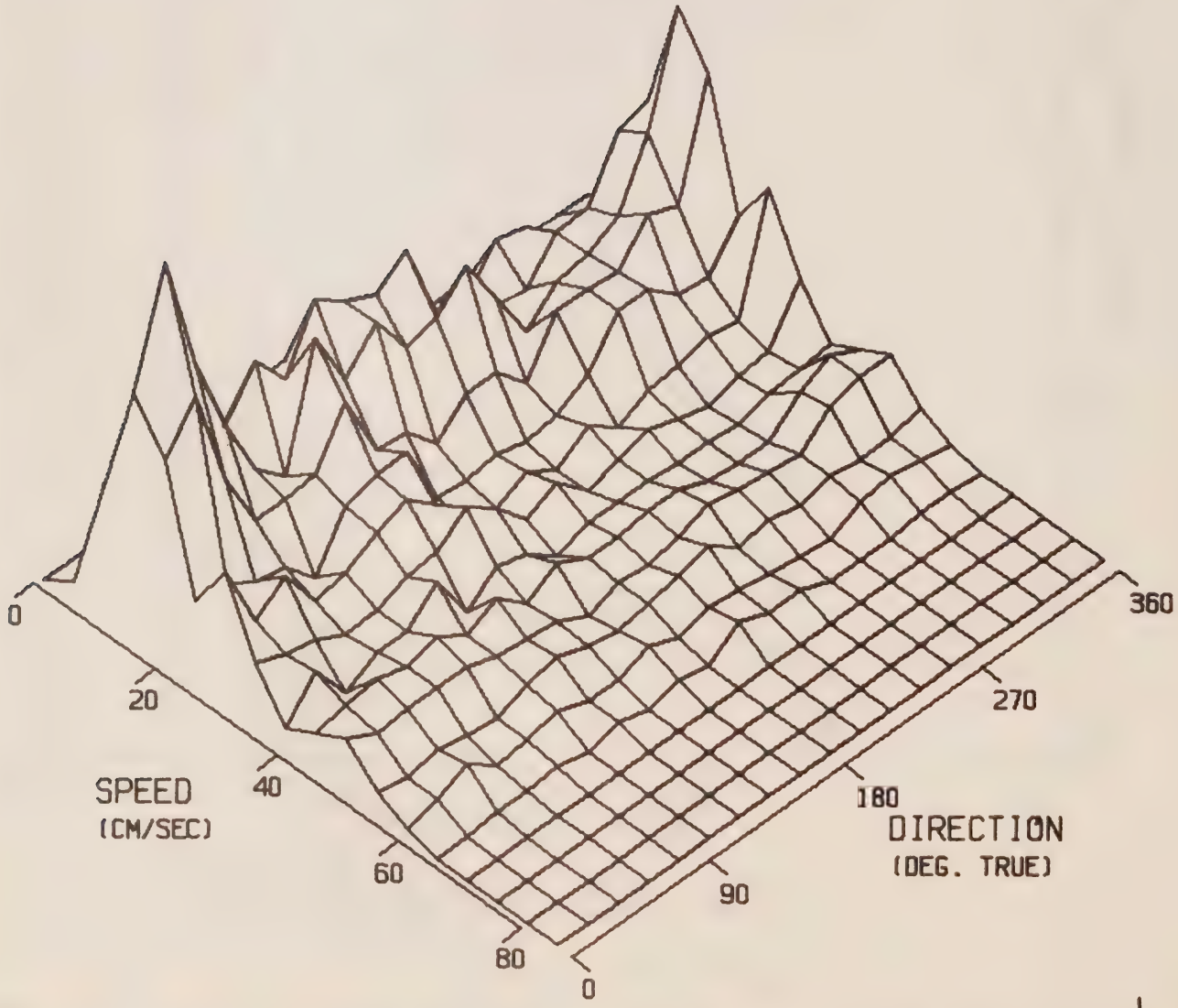
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 4/10/72 ENDING DATE: 25/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 4/10/72
NO. OF SAMPLES = 2989



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE: 4/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14	008	063	073	048	022	011	008	003					236
15- 29	008	087	076	024	013	019	008	006					241
30- 44	005	087	046	019	008	012	011	007					195
45- 59	005	051	036	028	014	011	006	005	001				157
60- 74	011	030	021	012	010	016	009	005	001				115
75- 89	010	041	017	010	008	016	009	002					113
90-104	016	030	027	021	014	012	003	008					131
105-119	018	048	031	023	018	014	016	005					173
120-134	019	032	039	033	012	007	005	003	001				151
135-149	021	053	021	021	020	008	008	002					154
150-164	010	055	022	007	015	006	004	005					124
165-179	012	039	017	004	006	009	001	006					94
180-194	010	044	010	005	006	005	005	004	001				90
195-209	007	044	015	004	008	009	008	006	001				102
210-224	004	037	020	004	001	007	007	004	004				88
225-239	002	023	022	001	005	007	007	007	001				75
240-254	005	018	012	011	002	009	007	002					66
255-269	004	014	020	003	005	006	008	002					62
270-284	016	013	028	014	005	004	008	001					89
285-299	008	020	017	013	002	003	005	003					71
300-314	010	019	031	015	002	002	006	004					89
315-329	006	025	027	014	004	013	011	005					105
330-344	010	037	028	010	006	010	013	006					120
345-359	003	053	038	016	006	014	015	003					148
	228		694		212		188		10		0		2989
		963		360		230		104		0		0	

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 04/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60	120	180	240	300
9	1	0					
27	16	1	***				
45	58	2	**********				
63	122	4	**********				
81	147	5	**********				
99	192	6	**********				
117	259	9	**********				
135	191	6	**********				
153	205	7	**********				
171	244	8	**********				
189	172	6	**********				
207	158	5	**********				
225	102	3	**********				
243	79	3	**********				
261	93	3	**********				
279	80	3	**********				
297	79	3	**********				
315	57	2	**********				
333	59	2	**********				
351	64	2	**********				
369	39	1	*******				
387	40	1	*******				
405	32	1	*****				
423	38	1	******				
441	53	2	**********				
459	57	2	**********				
477	77	3	**********				
495	53	2	**********				
513	45	2	**********				
531	35	1	******				
549	28	1	*****				
567	34	1	******				
585	29	1	*****				
603	16	1	***				
621	22	1	****				
639	5	0	*				
657	6	0	*				
675	2	0					
693	0	0					
711	0	0					

NO. OF SAMPLES OVER 720 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2989
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 04/10/72

MEDIAN (DEG,T)	FREQUNCY NO,	PCT	50 100 150 200 250
5	176	6	**********
15	143	5	********
25	166	6	**********
35	141	5	********
45	112	4	*******
55	99	3	******
65	71	2	****
75	88	3	*****
85	66	2	****
95	82	3	*****
105	107	4	*******
115	121	4	********
125	102	3	******
135	108	4	*******
145	91	3	******
155	92	3	******
165	65	2	****
175	62	2	****
185	52	2	***
195	73	2	*****
205	69	2	****
215	56	2	***
225	56	2	***
235	46	2	***
245	48	2	***
255	40	1	**
265	41	1	**
275	62	2	****
285	42	1	**
295	58	2	****
305	57	2	***
315	74	2	*****
325	62	2	****
335	82	3	*****
345	85	3	*****
355	94	3	******
365	0	0	
375	0	0	
385	0	0	
395	0	0	

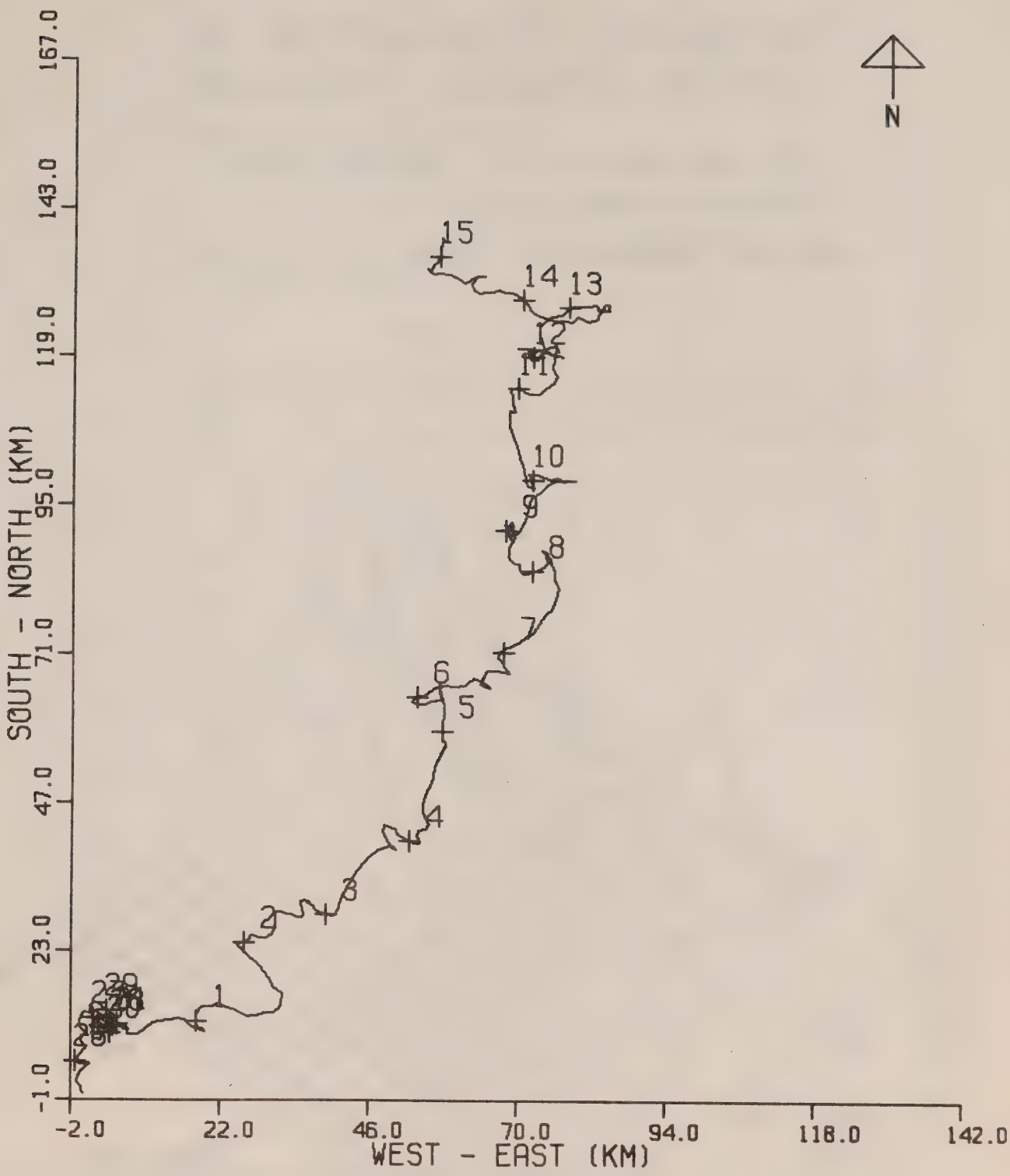
NO, OF SAMPLES OVER 400 = 0
NO, OF SAMPLES UNDER 0 = 0
TOTAL NO, OF OBSERVATIONS = 2989
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 04/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 60 120 180 240 300
8.52	0	0	
8.56	2	0	
8.60	17	1	***
8.64	29	1	*****
8.68	15	1	***
8.72	30	1	*****
8.76	35	1	******
8.80	213	7	**************************************
8.84	112	4	********************
8.88	153	5	****************************
8.92	56	2	**********
8.96	137	5	*************************
9.00	40	1	*******
9.04	119	4	*********************
9.08	116	4	*********************
9.12	164	5	*****************************
9.16	220	7	**
9.20	121	4	*********************
9.24	252	8	**
9.28	202	7	************************************
9.32	152	5	***************************
9.36	72	2	************
9.40	93	3	*****************
9.44	27	1	*****
9.48	62	2	**********
9.52	21	1	****
9.56	57	2	**********
9.60	36	1	******
9.64	49	2	********
9.68	22	1	****
9.72	52	2	*********
9.76	99	3	******************
9.80	43	1	*******
9.84	54	2	*********
9.88	38	1	******
9.92	39	1	*******
9.96	11	0	**
10.00	4	0	*
10.04	4	0	*
10.08	4	0	*

NO. OF SAMPLES OVER 10.10 = 17
NO. OF SAMPLES UNDER 8.50 = 0
TOTAL NO. OF OBSERVATIONS = 2989
SAMPLE INTERVAL = 10 MINUTES



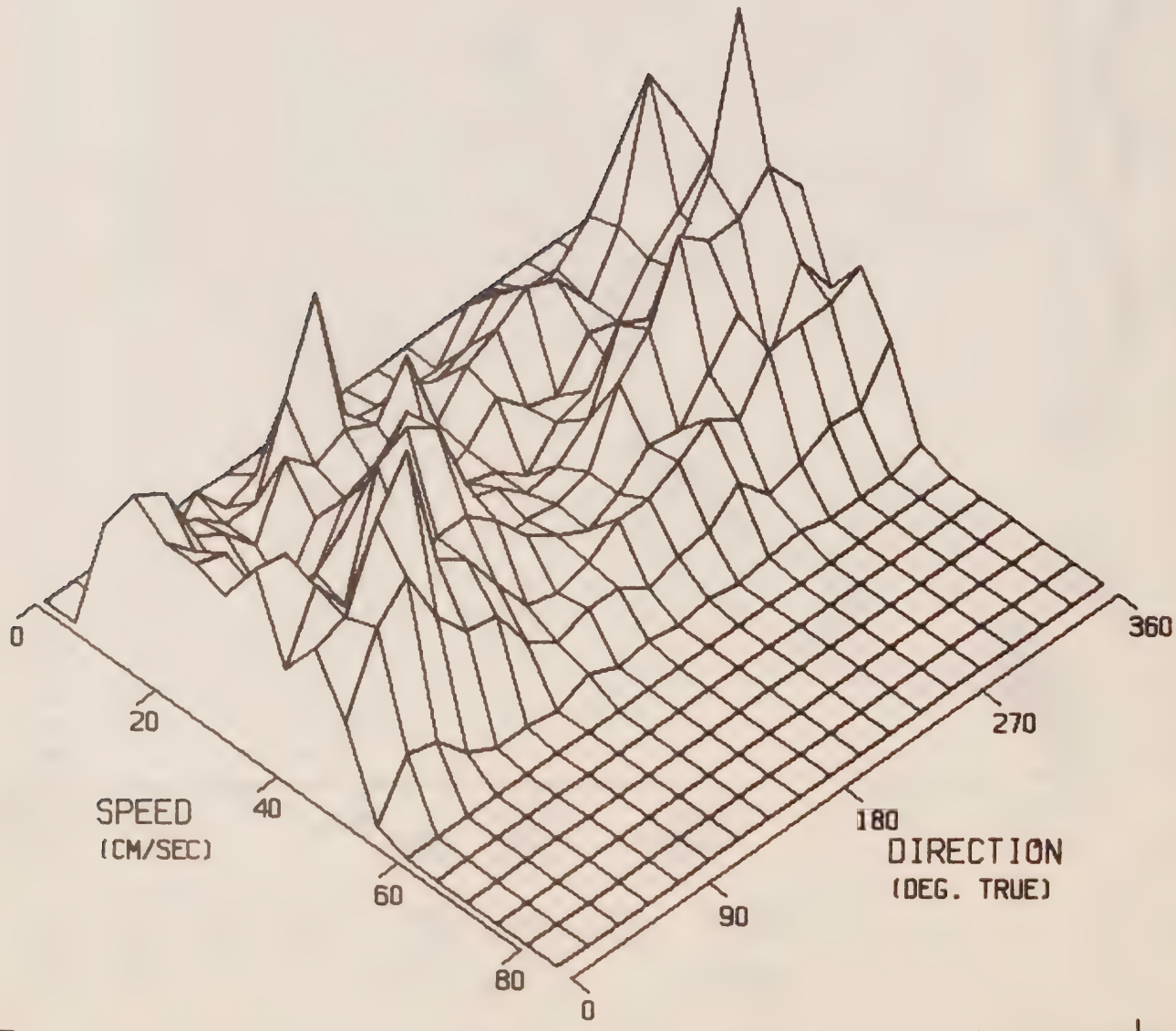
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 25/10/72 ENDING DATE: 15/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 25/10/72
NO. OF SAMPLES = 3000



STN. NO. HS=4 DEPTH 10 M.

STARTING DATE:25/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14		031	039	023	031	030	014						168
15- 29		023	023	032	043	031	036	001					189
30- 44		022	015	021	032	043	032	001					166
45- 59	002	020	007	009	021	046	027	002					134
60- 74		011	006	020	029	051	018						135
75- 89	008	012	002	024	036	030	013						125
90-104	002	018	015	021	053	029	008						146
105-119	002	019	019	046	042	029	011						168
120-134	006	026	013	033	034	019	005						136
135-149	006	041	015	032	023	014	005						136
150-164	006	018	009	015	011	011	007						77
165-179	003	012	012	014	011	007	003						62
180-194	001	016	004	006	011	009	004						51
195-209	001	008	007	007	009	013	003						48
210-224		010	010	003	008	009	003						43
225-239		016	012	011	017	015	004						75
240-254	001	018	007	017	021	023	004						91
255-269	005	019	006	018	028	026	009						111
270-284	007	017	012	015	045	016	004						116
285-299	004	014	013	022	045	021	004						123
300-314	001	008	009	033	039	026	004						120
315-329		027	020	041	041	025	008						162
330-344		045	031	050	047	033	005						211
345-359		031	037	049	042	039	009						207
	55	482	343	562	719	595	240	4	0	0	0		3000

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M, START DATE 25/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
8	0	0	
24	1	0	
40	8	0	**
56	19	1	****
72	27	1	*****
88	67	2	**********
104	91	3	**********
120	120	4	**********
136	104	3	**********
152	100	3	**********
168	92	3	**********
184	71	2	**********
200	69	2	**********
216	57	2	**********
232	68	2	**********
248	56	2	**********
264	86	3	**********
280	124	4	**********
296	138	5	**********
312	144	5	**********
328	173	6	**********
344	194	6	**********
360	148	5	**********
376	130	4	**********
392	108	4	**********
408	75	3	**********
424	87	3	**********
440	137	5	**********
456	128	4	**********
472	134	4	**********
488	108	4	**********
504	62	2	**********
520	43	1	**********
536	16	1	***
552	12	0	**
568	3	0	*
584	0	0	
600	0	0	
616	0	0	
632	0	0	

NO. OF SAMPLES OVER 640 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M, START DATE 25/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	123	4	**********
15	111	4	**********
25	140	5	**********
35	120	4	**********
45	89	3	********
55	82	3	********
65	95	3	********
75	85	3	********
85	82	3	********
95	98	3	********
105	103	3	********
115	113	4	**********
125	88	3	********
135	98	3	********
145	84	3	********
155	55	2	*****
165	36	1	***
175	44	1	****
185	37	1	***
195	32	1	***
205	27	1	**
215	30	1	***
225	42	1	****
235	47	2	****
245	56	2	*****
255	68	2	******
265	82	3	********
275	85	3	********
285	71	2	*******
295	82	3	********
305	89	3	********
315	86	3	********
325	114	4	**********
335	148	5	**********
345	140	5	**********
355	118	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

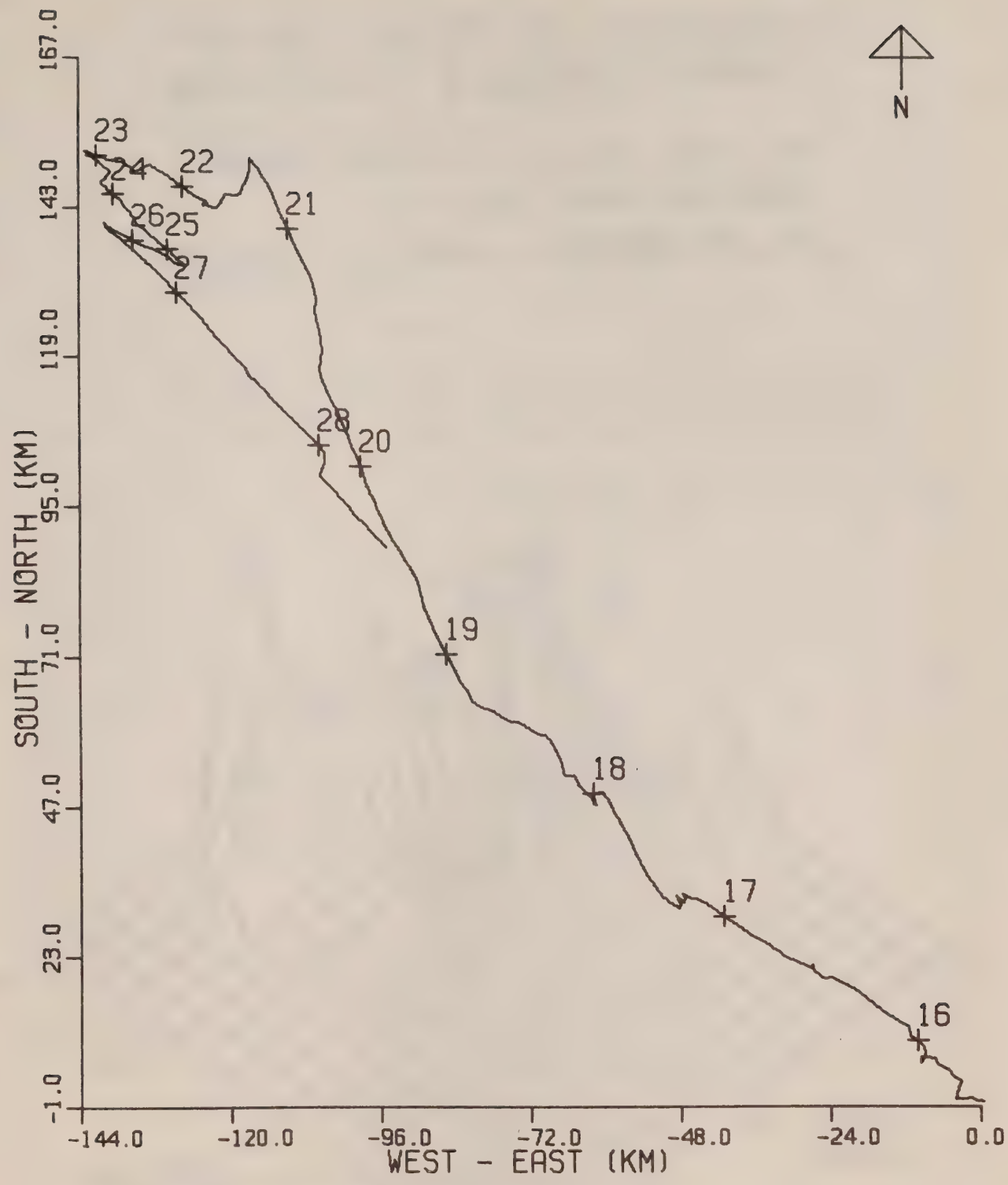
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 25/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	140 280 420 560 700
8.02	1	0	
8.06	2	0	
8.10	12	0	*
8.14	32	1	**
8.18	39	1	***
8.22	18	1	*
8.26	10	0	*
8.30	13	0	*
8.34	10	0	*
8.38	81	3	******
8.42	31	1	**
8.46	28	1	**
8.50	17	1	*
8.54	157	5	**********
8.58	71	2	*****
8.62	211	7	**********
8.66	242	8	**********
8.70	687	23	**********
8.74	98	3	*******
8.78	116	4	********
8.82	54	2	****
8.86	27	1	**
8.90	62	2	****
8.94	39	1	***
8.98	115	4	********
9.02	82	3	******
9.06	176	6	**********
9.10	41	1	***
9.14	92	3	*******
9.18	46	2	***
9.22	89	3	******
9.26	48	2	***
9.30	118	4	********
9.34	37	1	***
9.38	57	2	****
9.42	29	1	**
9.46	4	0	
9.50	4	0	
9.54	1	0	
9.58	3	0	

NO. OF SAMPLES OVER 9.60 = 0
NO. OF SAMPLES UNDER 8.00 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES



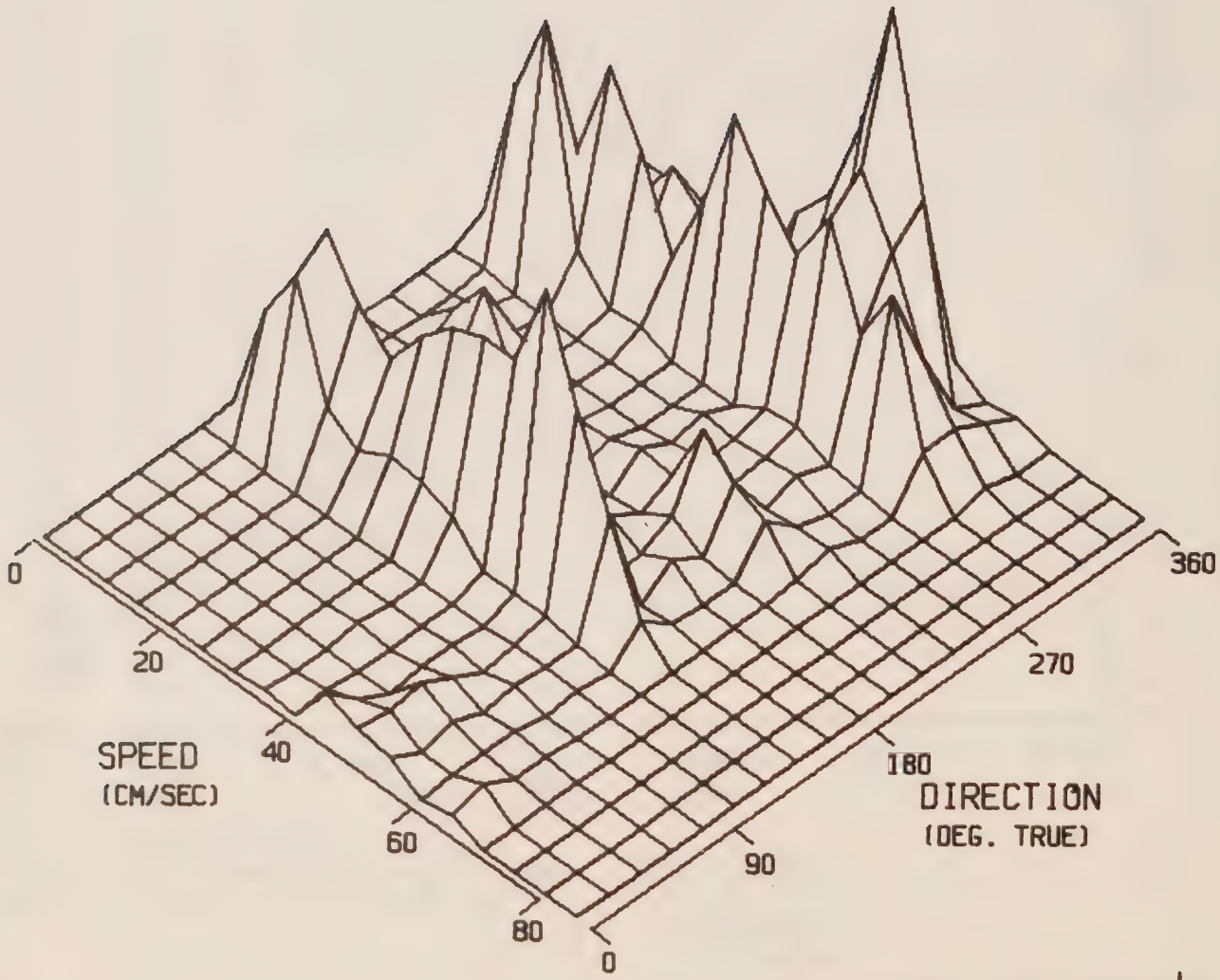
STN. NO. HS-4

DEPTH 10 M.

STARTING DATE: 15/11/72 ENDING DATE: 28/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 10 M.
STARTING DATE: 15/11/72
NO. OF SAMPLES = 1925



STN. NO. HS-4 DEPTH 10 M.

STARTING DATE:15/11/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 079	080 TO 159	160 TO 239	240 TO 319	320 TO 399	400 TO 479	480 TO 559	560 TO 639	640 TO 719	720 TO 799	800 TO 879	880 TO 959	
0- 14					001	008	004	003	003				19
15- 29						005	008	002	003				18
30- 44							008	001	001				10
45- 59						001	004	005					10
60- 74					001		003	001					5
75- 89						001	001	001					3
90-104							001	002					3
105-119							002						2
120-134	045	092	047	060	043	025	013						325
135-149		026	026	037	044	087	052	015					287
150-164	001	001	001		001			001					5
165-179						003	001						4
180-194	001		003	001	001	005	006	001					18
195-209		001	001			001	005						8
210-224		009	002	002	008	005	028	012					66
225-239		014	003			004	004	008	002				35
240-254	001				001	002	004	001					9
255-269	001				001	005	009	001					17
270-284	002	027				003	007						39
285-299	048	096	021	006	015	019	027	022	001				255
300-314		007	036	036	078	052	051	041	007				308
315-329					001	016	068	025	009				119
330-344	001	017	012	014	041	082	119	019	005				310
345-359				002		019	020	007	002				50
	100	290	152	158	236	343	445	168	33	0	0	0	1925

NO. OF SPEEDS EXCEEDING 960 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 10M. START DATE 15/11/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	40	80	120	160	200
9	0	0					
27	16	1	****				
45	29	2	*******				
63	43	2	**********				
81	64	3	**********				
99	69	4	**********				
117	82	4	**********				
135	38	2	**********				
153	49	3	**********				
171	54	3	**********				
189	32	2	********				
207	34	2	*********				
225	27	1	*******				
243	29	2	*******				
261	29	2	*******				
279	29	2	*******				
297	43	2	**********				
315	43	2	**********				
333	46	2	**********				
351	68	4	**********				
369	58	3	**********				
387	54	3	**********				
405	54	3	**********				
423	45	2	**********				
441	80	4	**********				
459	91	5	**********				
477	131	7	**********				
495	100	5	**********				
513	114	6	**********				
531	113	6	**********				
549	60	3	**********				
567	53	3	**********				
585	53	3	**********				
603	31	2	********				
621	24	1	******				
639	17	1	****				
657	12	1	***				
675	9	0	**				
693	2	0	*				
711	0	0					

NO. OF SAMPLES OVER 720 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1925
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 10M. START DATE 15/11/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 80 160 240 320 400
5	16	1	**
15	14	1	**
25	7	0	*
35	8	0	*
45	7	0	*
55	5	0	*
65	5	0	*
75	2	0	
85	1	0	
95	3	0	
105	0	0	
115	2	0	
125	148	8	**********
135	399	21	**********
145	66	3	********
155	3	0	
165	1	0	
175	4	0	*
185	15	1	**
195	4	0	*
205	8	0	*
215	41	2	*****
225	47	2	******
235	14	1	**
245	6	0	*
255	6	0	*
265	12	1	**
275	28	1	****
285	108	6	**********
295	189	10	**********
305	257	13	**********
315	47	2	******
325	120	6	**********
335	239	12	**********
345	79	4	**********
355	14	1	**
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1925
SAMPLE INTERVAL = 10 MINUTES

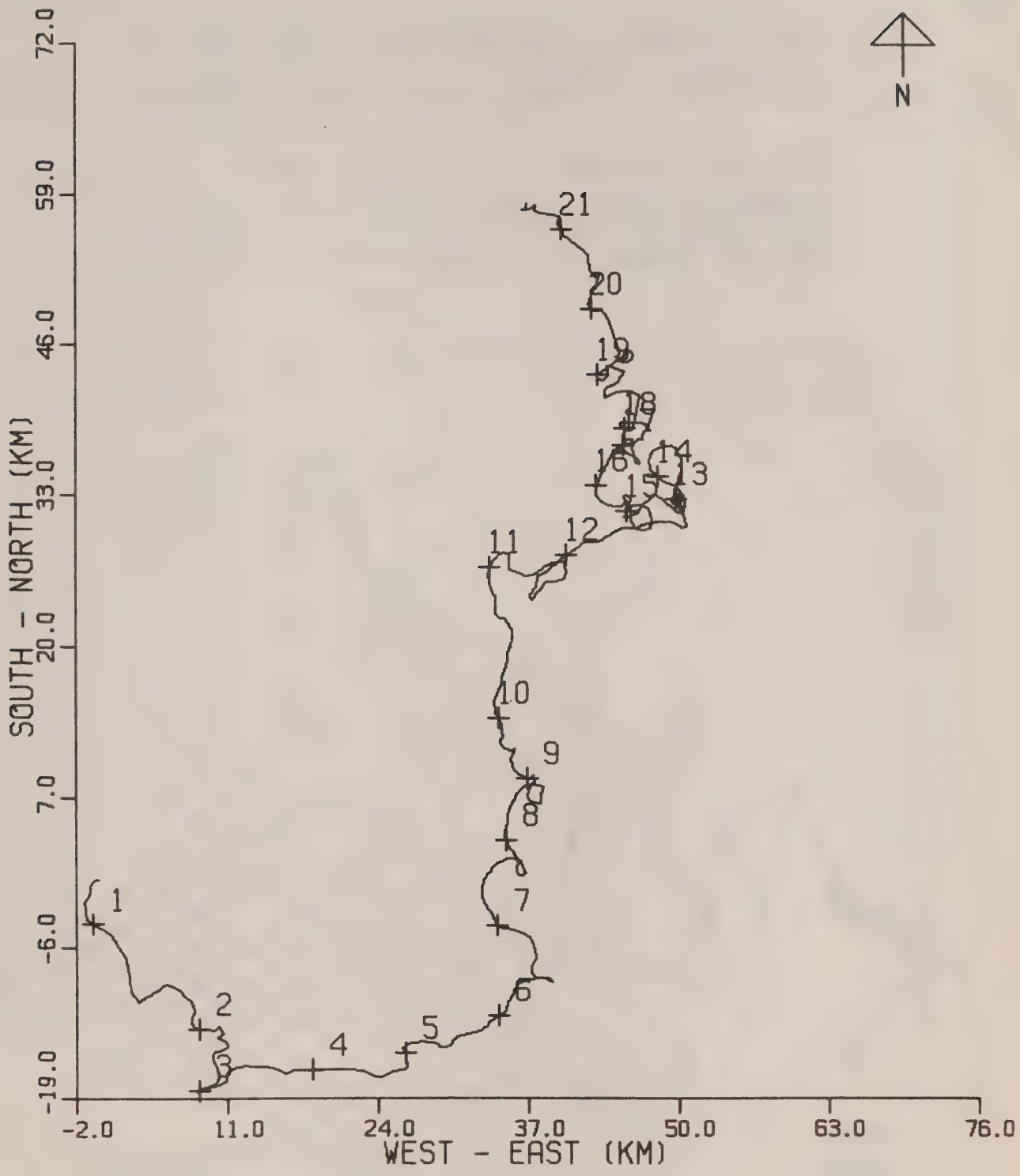
HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 10M, START DATE 15/11/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 50 100 150 200 250
7.42	0	0	
7.46	1	0	
7.50	9	0	**
7.54	4	0	*
7.58	9	0	**
7.62	19	1	****
7.66	42	2	********
7.70	98	5	**********
7.74	36	2	*******
7.78	90	5	**********
7.82	72	4	**********
7.86	241	13	**********
7.90	125	6	**********
7.94	216	11	**********
7.98	49	3	**********
8.02	219	11	**********
8.06	102	5	**********
8.10	215	11	**********
8.14	81	4	**********
8.18	112	6	**********
8.22	114	6	**********
8.26	30	2	******
8.30	23	1	*****
8.34	4	0	*
8.38	7	0	*
8.42	3	0	*
8.46	4	0	*
8.50	0	0	
8.54	0	0	
8.58	0	0	
8.62	0	0	
8.66	0	0	
8.70	0	0	
8.74	0	0	
8.78	0	0	
8.82	0	0	
8.86	0	0	
8.90	0	0	
8.94	0	0	
8.98	0	0	

NO. OF SAMPLES OVER 9.00 = 0
NO. OF SAMPLES UNDER 7.40 = 0
TOTAL NO. OF OBSERVATIONS = 1925
SAMPLE INTERVAL = 10 MINUTES

DATA FOR 30-METRE DEPTH



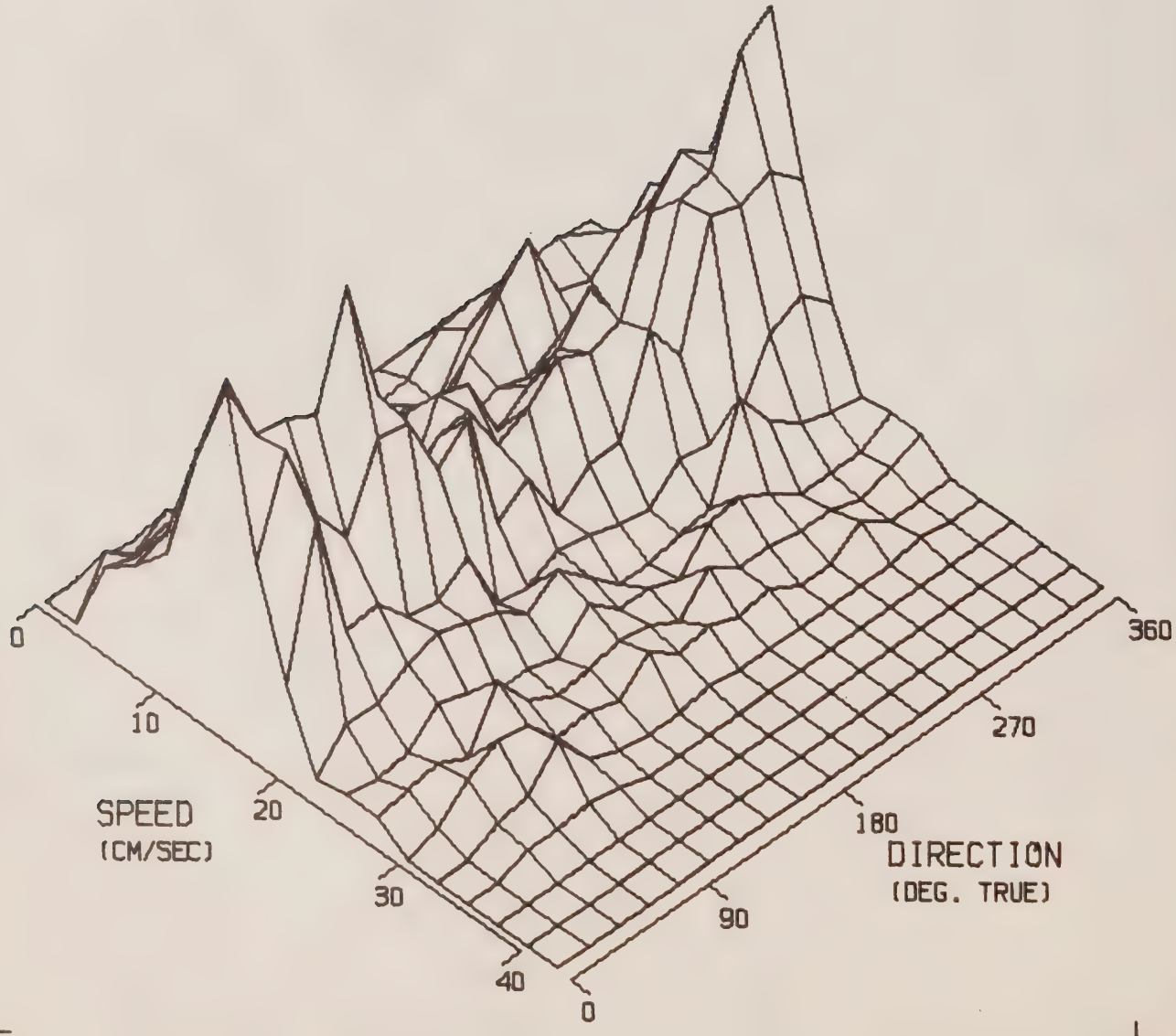
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 30/11/71 ENDING DATE: 21/12/71

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30M
STARTING DATE: 30/11/71
NO. OF SAMPLES = 3014



STN.NO.HS=4 DEPTH 30M.

STARTING DATE:30/11/71
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14		024	033	066	031	013	007	001			001		176
15- 29	009	020	054	061	053	024	004	002					227
30- 44	003	012	019	052	029	017	009	004	002				147
45- 59	005	023	019	035	034	015	002	010	002				145
60- 74	009	020	029	053	027	015	015	015	007				190
75- 89	002	016	024	063	036	016	009	009	009				184
90-104	002	018	024	049	041	011	005	004	003				157
105-119	004	011	018	037	025	016	003	008					122
120-134	001	010	010	020	029	006	004	004					84
135-149	001	012	011	029	028	006	005	002					94
150-164		013	021	037	012	009	008	006					106
165-179	002	004	017	030	010	011	007	003					84
180-194	001	007	008	026	013	001	004	006					66
195-209	001	005	015	018	004	003	003	002					51
210-224	002	006	015	029	008	001	004	003					68
225-239	003	014	012	023	006		007	001					66
240-254	007	027	020	030	015	003	006	003					111
255-269	005	023	022	029	023	004	009	001					116
270-284	003	019	015	025	017	011	004	002					96
285-299	002	015	015	031	019	019	002	002					105
300-314	004	018	006	052	037	006	001	003					127
315-329	003	016	041	054	036	012			001				163
330-344	004	022	034	056	041	012	003						172
345-359		009	028	073	034	006	004						154
	73	364	510	978	608	237	125	91	24	0	1	0	3011

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 9

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 30/11/71

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60 120 180 240 300
5	0	0	
15	17	1	***
25	18	1	***
35	58	2	**********
45	56	2	*********
55	101	3	******************
65	88	3	****************
75	99	3	******************
85	130	4	************************
95	78	3	**************
105	162	5	******************************
115	140	5	**************************
125	241	8	**
135	203	7	**************************************
145	317	10	**
155	217	7	**
165	159	5	*****************************
175	229	8	***
185	110	4	********************
195	110	4	********************
205	79	3	**************
215	76	3	**************
225	38	1	******
235	56	2	*********
245	27	1	*****
255	24	1	****
265	32	1	*****
275	30	1	*****
285	42	1	*******
295	23	1	****
305	18	1	***
315	8	0	*
325	7	0	*
335	12	0	**
345	4	0	*
355	1	0	
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 10
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3020
SAMPLE INTERVAL = 10 MINUTES
RELEASED.

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M, START DATE 30/11/71

MEDIAN (DEG.T)	FREQUNCY NO.	PCT	50 100 150 200 250
5	120	4	************************
15	189	6	**
25	107	4	**********************
35	92	3	*******************
45	102	3	**********************
55	100	3	**********************
65	113	4	************************
75	139	5	*******************************
85	120	4	************************
95	109	4	**********************
105	95	3	********************
115	69	2	***************
125	61	2	************
135	58	2	************
145	61	2	************
155	82	3	*****************
165	52	2	**********
175	54	2	**********
185	43	1	*********
195	37	1	*******
205	33	1	*******
215	57	2	**********
225	36	1	*******
235	48	2	**********
245	68	2	**************
255	83	3	******************
265	76	3	*****************
275	63	2	************
285	57	2	**********
295	86	3	******************
305	87	3	******************
315	74	2	***************
325	127	4	***************************
335	113	4	************************
345	101	3	**********************
355	105	3	**********************
365	0	0	
375	0	0	
385	0	0	
395	0	0	

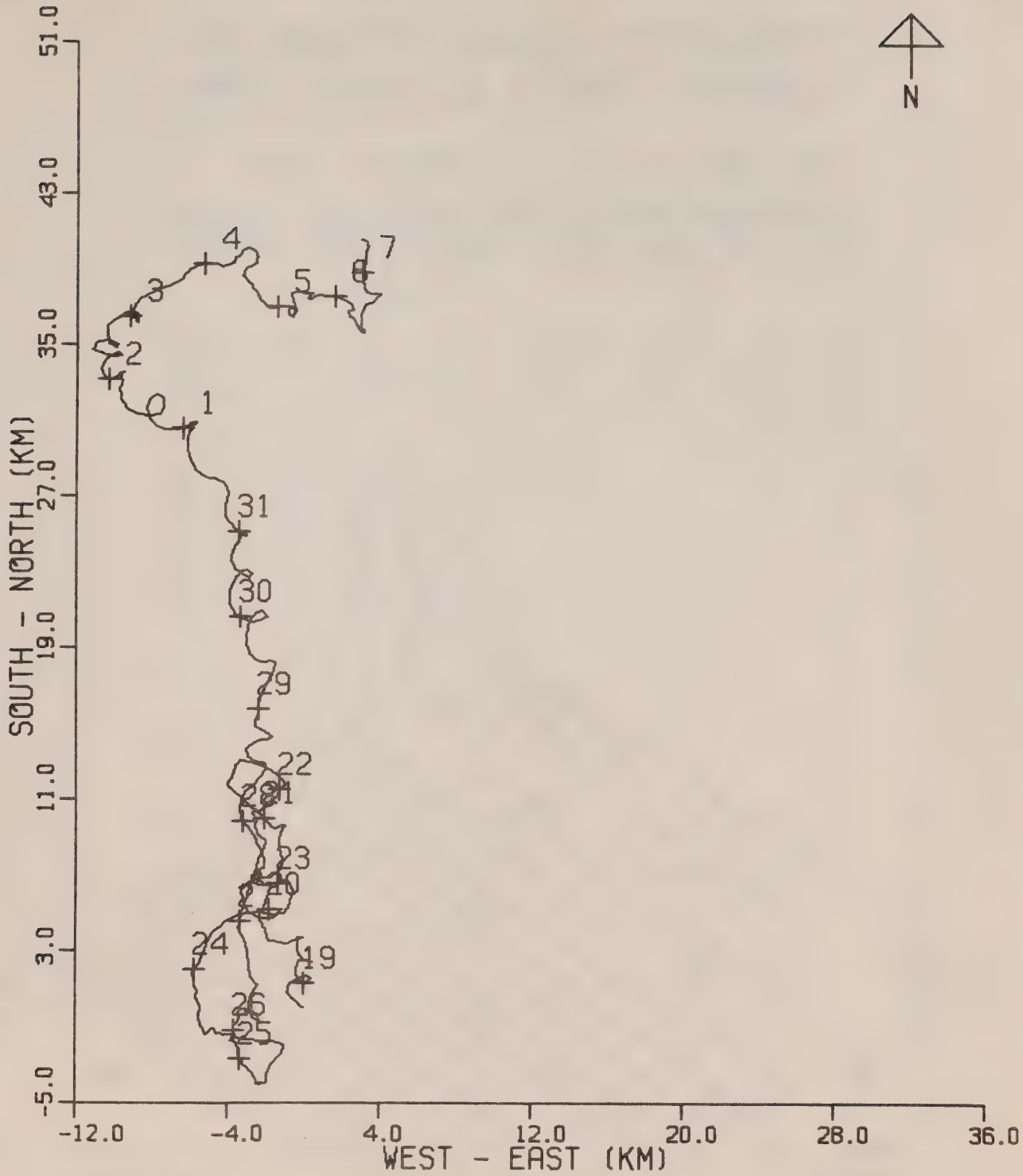
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3017
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 30M, START DATE 30/11/71

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	100 200 300 400 500
8.12	0	0	
8.16	0	0	
8.20	1	0	
8.24	1	0	
8.28	9	0	*
8.32	62	2	******
8.36	58	2	******
8.40	91	3	*********
8.44	139	5	**********
8.48	259	9	**********
8.52	108	4	**********
8.56	118	4	**********
8.60	97	3	**********
8.64	83	3	********
8.68	168	6	**********
8.72	57	2	******
8.76	17	1	**
8.80	17	1	**
8.84	80	3	********
8.88	23	1	**
8.92	12	0	*
8.96	39	1	****
9.00	407	13	**********
9.04	280	9	**********
9.08	436	14	**********
9.12	335	11	**********
9.16	102	3	**********
9.20	15	0	**
9.24	0	0	
9.28	0	0	
9.32	0	0	
9.36	0	0	
9.40	0	0	
9.44	0	0	
9.48	0	0	
9.52	0	0	
9.56	0	0	
9.60	0	0	
9.64	0	0	
9.68	0	0	

NO. OF SAMPLES OVER 9.70 = 0
NO. OF SAMPLES UNDER 8.10 = 3
TOTAL NO. OF OBSERVATIONS = 3017
SAMPLE INTERVAL = 10 MINUTES



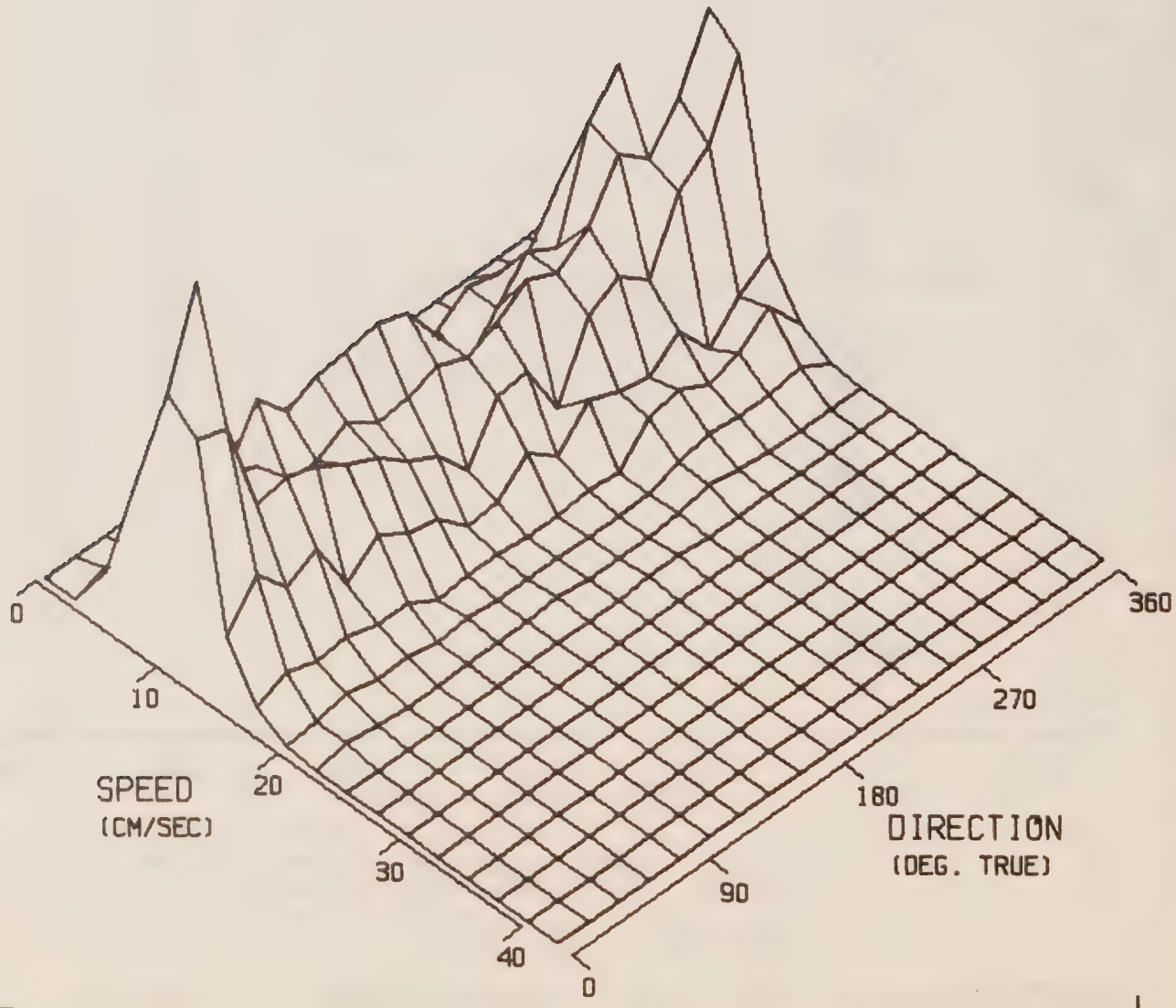
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 18/ 7/72 ENDING DATE: 7/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30 M.
STARTING DATE: 18/ 7/72
NO. OF SAMPLES = 2841



STN. NO. HS-4 DEPTH 30 M.

STARTING DATE:18/ 7/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO	
DIR	039	079	119	159	199	239	279	319	359	399	439	479	
0- 14		029	120	049	004	002							204
15- 29	002	038	115	056	010	001							222
30- 44	002	038	061	031	007	001							140
45- 59	001	032	055	044	007	001							140
60- 74	001	028	048	030	007	001							115
75- 89	004	036	044	023	005								112
90-104	003	025	040	037	003								108
105-119	002	029	035	028	002	001							97
120-134		043	043	017									103
135-149	006	031	040	019	001								97
150-164		035	038	010	001	001							85
165-179	005	022	042	010									79
180-194	001	035	031	009			001						77
195-209		030	029	017									76
210-224	001	017	034	015			001						68
225-239	002	028	031	013	001								75
240-254		027	042	019	001	001							90
255-269	002	027	044	015	010	005							103
270-284	006	024	058	018	012	002							120
285-299	005	043	064	020	007	004							143
300-314		055	062	016	007								140
315-329	002	051	071	023	011								158
330-344	002	023	074	032	015	002							148
345-359		036	067	028	008	002							141
	47	1288		119		2	0		0				2841
		782	579		24		0		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 18/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70 140 210 280 350
3	0	0	
9	0	0	
15	1	0	
21	5	0	*
27	6	0	*
33	35	1	*****
39	30	1	****
45	87	3	**********
51	65	2	*********
57	152	5	**********
63	91	3	**********
69	240	8	**********
75	117	4	**********
81	128	5	**********
87	251	9	**********
93	136	5	**********
99	241	8	**********
105	130	5	**********
111	258	9	**********
117	144	5	**********
123	175	6	**********
129	83	3	**********
135	135	5	**********
141	50	2	*******
147	88	3	**********
153	32	1	*****
159	16	1	**
165	39	1	******
171	18	1	***
177	22	1	***
183	8	0	*
189	20	1	***
195	5	0	*
201	11	0	**
207	4	0	*
213	10	0	*
219	1	0	
225	4	0	*
231	1	0	
237	0	0	

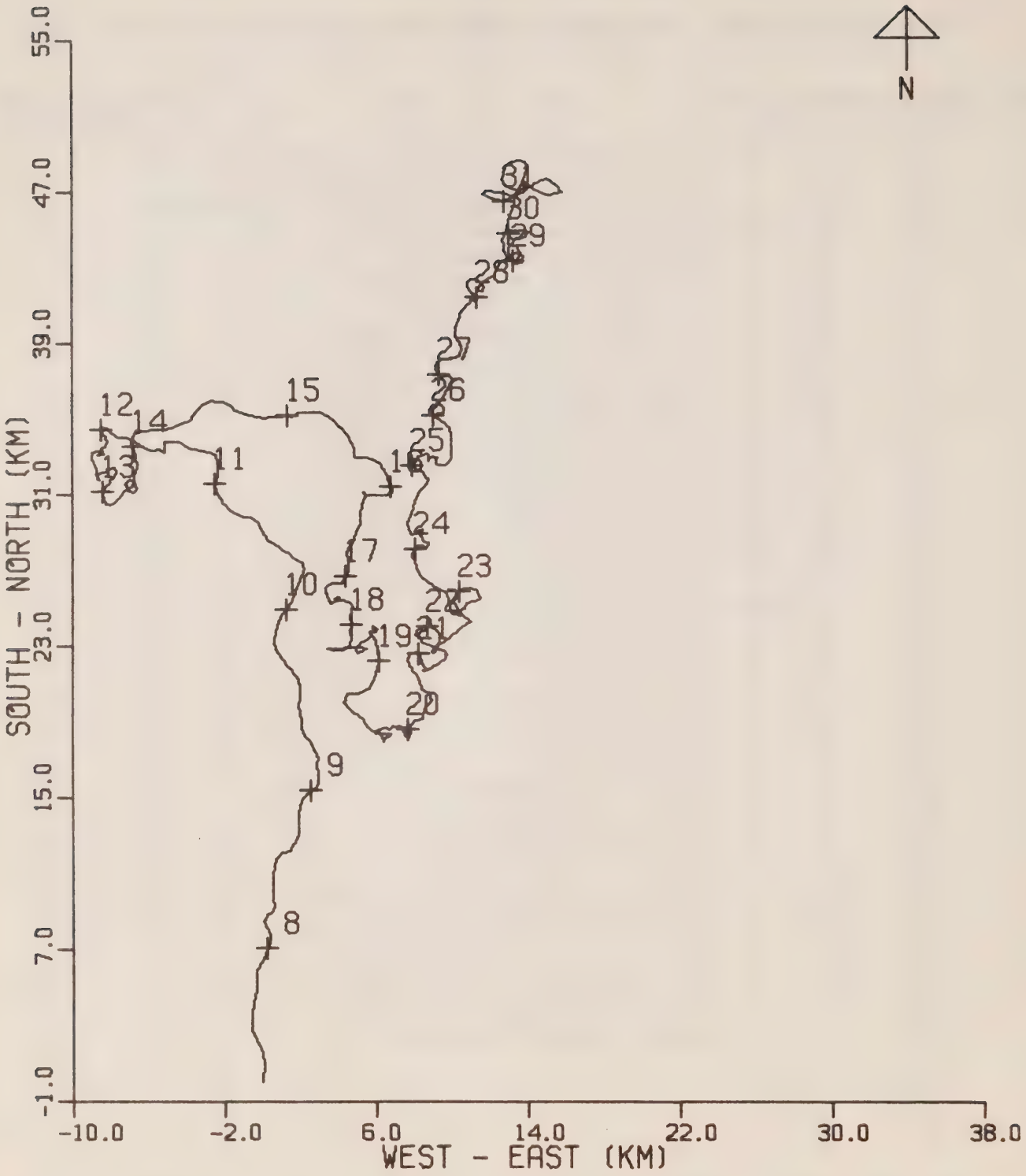
NO. OF SAMPLES OVER 240 = 3
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2842
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M, START DATE 18/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	40 80 120 160 200
5	151	5	**********
15	135	5	*********
25	153	5	**********
35	93	3	******
45	85	3	*****
55	95	3	******
65	79	3	*****
75	74	3	*****
85	75	3	*****
95	73	3	*****
105	69	2	****
115	62	2	****
125	71	2	****
135	69	2	****
145	57	2	***
155	63	2	****
165	50	2	***
175	53	2	***
185	47	2	***
195	49	2	***
205	56	2	***
215	45	2	***
225	46	2	***
235	54	2	***
245	52	2	***
255	67	2	****
265	75	3	*****
275	77	3	*****
285	77	3	*****
295	109	4	*******
305	92	3	******
315	106	4	*******
325	100	4	******
335	101	4	******
345	96	3	******
355	86	3	*****
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2842
SAMPLE INTERVAL = 10 MINUTES



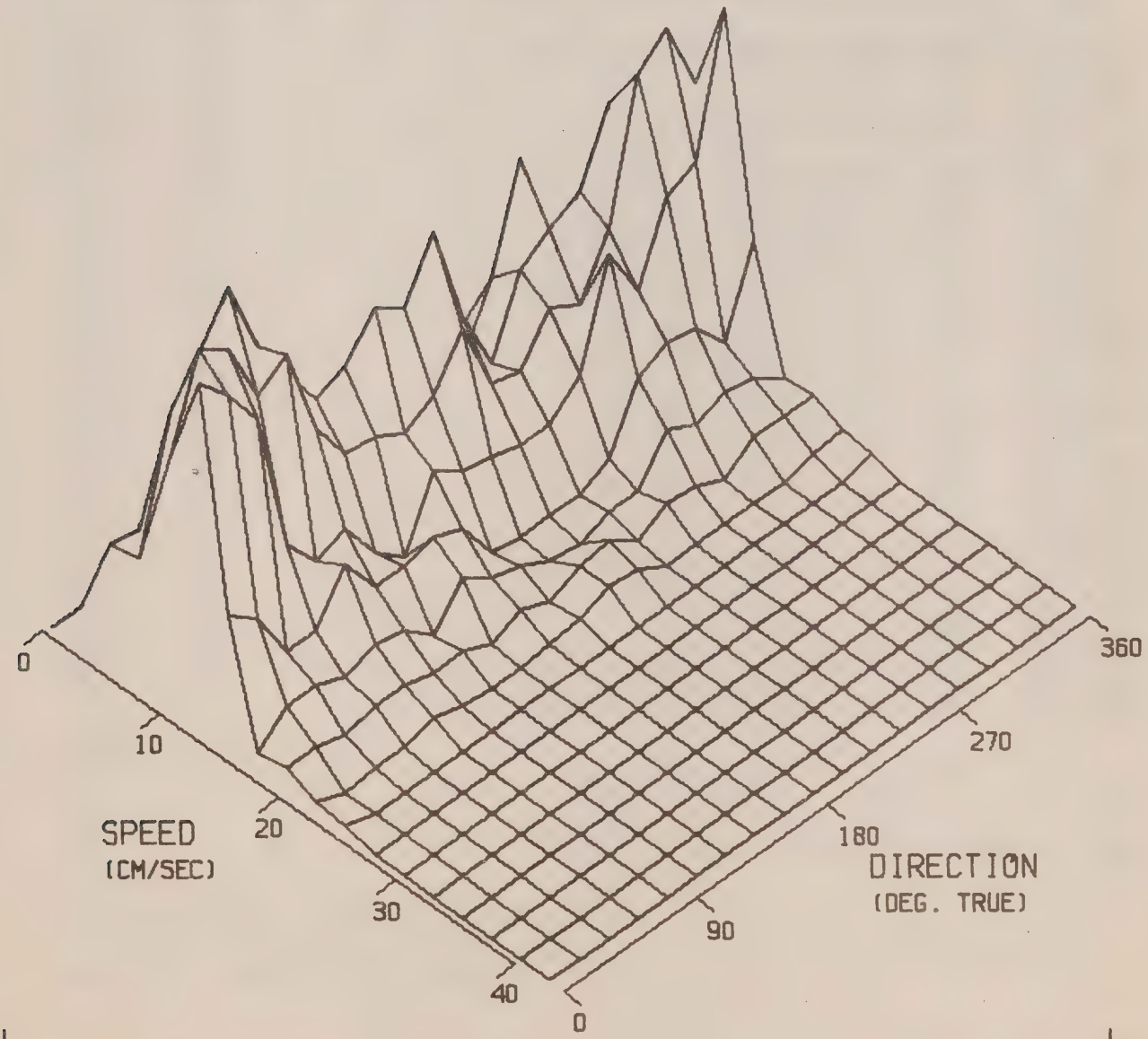
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 7/ 8/72 ENDING DATE: 31/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30 M.
STARTING DATE: 7/ 8/72
NO. OF SAMPLES = 3501



STN. NO. HS-4 DEPTH 30 M.

STARTING DATE: 7/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	009	035	082	068	007	007	001						209
15- 29	004	059	106	046	012	002							229
30- 44	009	064	103	043	008	003							230
45- 59	007	077	094	027	011	003							219
60- 74	006	072	062	020	006	003							169
75- 89	003	054	068	030	010	006							171
90-104	006	051	068	021	008	003							157
105-119	006	044	040	014	004	004							112
120-134	002	032	037	017	006								94
135-149	005	036	037	020	009	001							108
150-164	005	044	041	022	008	001							121
165-179	004	029	043	012	004	003							95
180-194	004	031	035	005	004	002							81
195-209	004	049	056	008	003	004							124
210-224	004	038	033	010	004	005							94
225-239	006	017	026	005	002	003							59
240-254	010	022	024	008	003								67
255-269	010	044	044	013	004	003							118
270-284	009	069	045	039	006	003							171
285-299	006	043	050	030	013								142
300-314	006	052	049	034	008								149
315-329	012	058	084	036	013	001							204
330-344	007	049	097	033	009	004							199
345-359	011	038	070	050	006	003	001						179
	155	1394		168		2		0		0			3501
	1107		611		64		0		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 07/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	80 160 240 320 400
3	0	0	
9	0	0	
15	15	0	**
21	44	1	******
27	32	1	****
33	64	2	********
39	37	1	*****
45	145	4	**********
51	91	3	**********
57	230	7	**********
63	147	4	**********
69	320	9	**********
75	137	4	**********
81	135	4	**********
87	303	9	**********
93	122	3	**********
99	308	9	**********
105	133	4	**********
111	258	7	**********
117	135	4	**********
123	190	5	**********
129	84	2	**********
135	134	4	**********
141	59	2	*******
147	83	2	**********
153	26	1	***
159	35	1	****
165	44	1	******
171	23	1	***
177	40	1	*****
183	12	0	**
189	25	1	***
195	8	0	*
201	34	1	****
207	8	0	*
213	20	1	***
219	5	0	*
225	8	0	*
231	5	0	*
237	0	0	

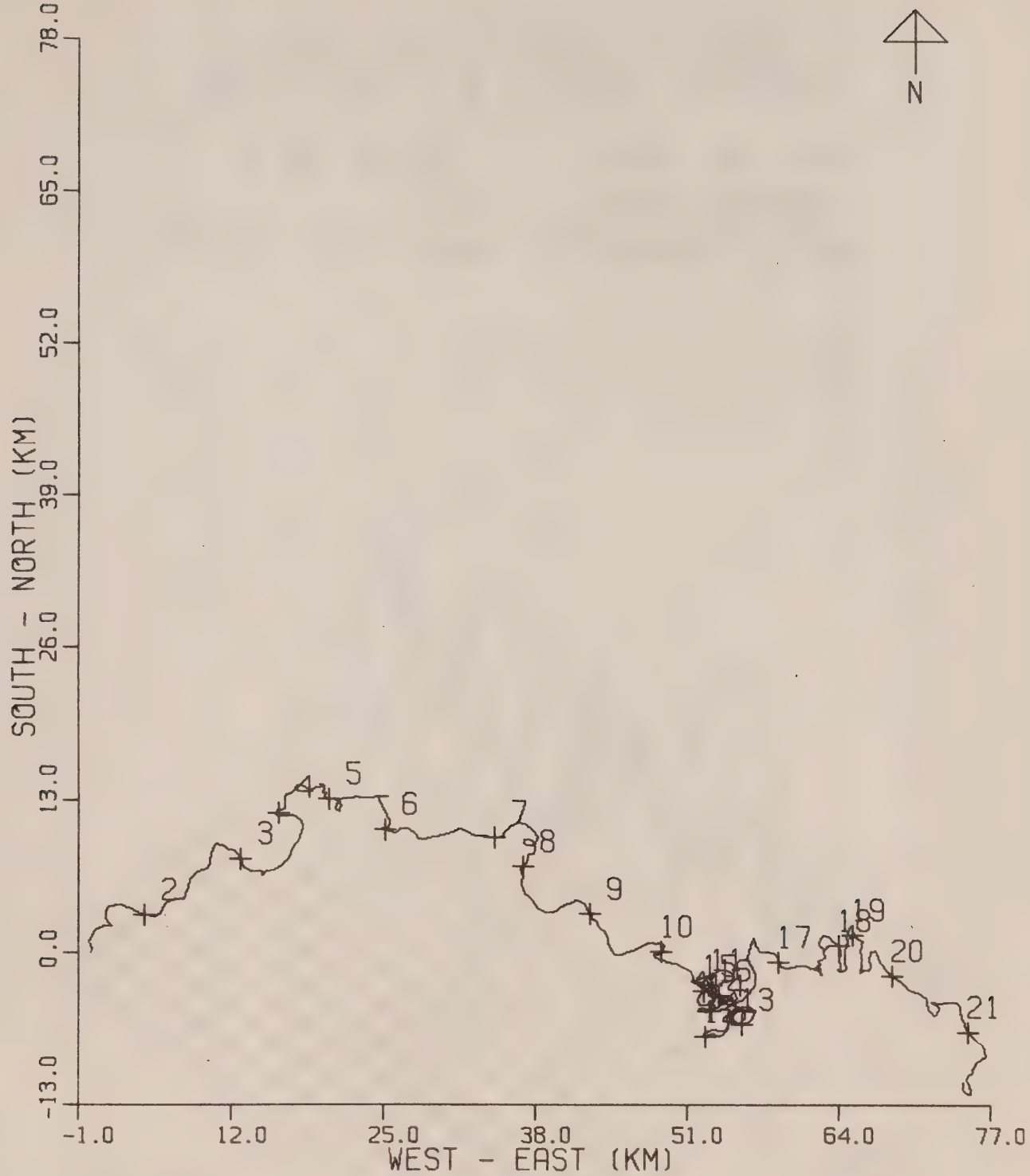
NO. OF SAMPLES OVER 240 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3501
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M, START DATE 07/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	40 80 120 160 200
5	151	4	**********
15	152	4	**********
25	149	4	**********
35	168	5	**********
45	130	4	**********
55	149	4	**********
65	120	3	**********
75	100	3	**********
85	124	4	**********
95	110	3	**********
105	78	2	**********
115	70	2	**********
125	69	2	**********
135	59	2	**********
145	74	2	**********
155	86	2	**********
165	68	2	**********
175	62	2	**********
185	61	2	**********
195	72	2	**********
205	78	2	**********
215	61	2	**********
225	48	1	**********
235	35	1	**********
245	50	1	**********
255	51	1	**********
265	94	3	**********
275	116	3	**********
285	98	3	**********
295	98	3	**********
305	92	3	**********
315	125	4	**********
325	140	4	**********
335	136	4	**********
345	112	3	**********
355	115	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3501
SAMPLE INTERVAL = 10 MINUTES



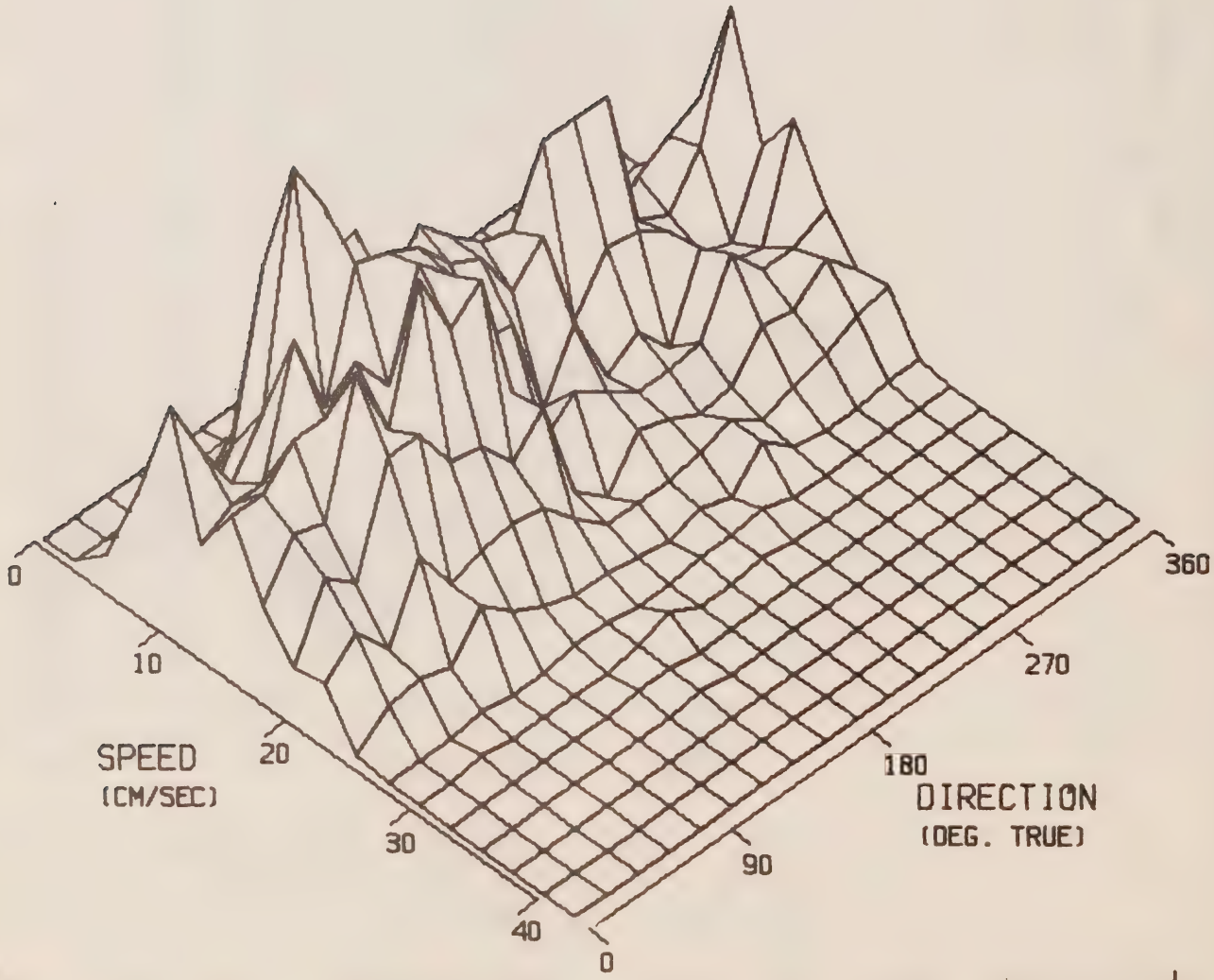
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 1/ 9/72 ENDING DATE: 21/ 9/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30 M.
STARTING DATE: 1/ 9/72
NO. OF SAMPLES = 2923



STN. NO. HS-4 DEPTH 30 M.

STARTING DATE: 1/ 9/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14		009	034	027	018	014	002						104
15- 29		005	037	035	029	022	005						133
30- 44		004	018	041	026	009	003	001					102
45- 59		010	028	042	035	018	005						138
60- 74		011	053	047	054	024	007						196
75- 89	003	025	075	040	030	028	010						211
90-104	001	027	065	050	049	020	004						216
105-119		034	055	060	047	020	007		001				224
120-134	001	026	048	065	045	026	001	001	001				214
135-149		032	042	061	038	016	002	001	001				193
150-164		016	045	041	032	011	002	003					150
165-179	001	010	052	038	010	009	001						121
180-194		009	032	031	011	004							87
195-209		012	036	020	013	001							82
210-224		009	037	029	010	005	001	002					93
225-239		006	033	013	012	007	002	001					74
240-254	001	004	046	012	004	004	001						72
255-269		004	048	017	007	007	005						88
270-284		013	048	010	005	004	002						82
285-299		005	025	010	011	006							57
300-314		004	014	024	027	007							76
315-329		004	017	012	010	008							51
330-344		010	015	009	015	013	001						63
345-359		011	042	022	014	006							95
	7	945		552		61		3		0			2922
	300		756		289		9		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 01/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 50 100 150 200 250 .
4	0	0	
12	1	0	
20	0	0	
28	3	0	*
36	4	0	*
44	21	1	****
52	29	1	******
60	69	2	**********
68	100	3	**********
76	80	3	**********
84	176	6	**********
92	213	7	**********
100	195	7	**********
108	199	7	**********
116	162	6	**********
124	155	5	**********
132	173	6	**********
140	133	5	**********
148	157	5	**********
156	138	5	**********
164	120	4	**********
172	124	4	**********
180	116	4	**********
188	105	4	**********
196	87	3	**********
204	81	3	**********
212	86	3	**********
220	69	2	**********
228	43	1	**********
236	24	1	*****
244	12	0	**
252	21	1	****
260	10	0	**
268	4	0	*
276	0	0	
284	3	0	*
292	1	0	
300	3	0	*
308	2	0	
316	0	0	

NO. OF SAMPLES OVER 320 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2923
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M, START DATE 01/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	82	3	**********
15	70	2	*********
25	93	3	**********
35	74	3	*********
45	63	2	********
55	99	3	**********
65	135	5	**********
75	146	5	**********
85	139	5	**********
95	141	5	**********
105	158	5	**********
115	143	5	**********
125	137	5	**********
135	143	5	**********
145	114	4	**********
155	104	4	**********
165	91	3	**********
175	76	3	*********
185	64	2	********
195	48	2	******
205	58	2	********
215	59	2	********
225	63	2	********
235	43	1	******
245	47	2	******
255	56	2	********
265	55	2	********
275	52	2	********
285	49	2	********
295	36	1	******
305	53	2	********
315	41	1	******
325	32	1	*****
335	42	1	******
345	49	2	********
355	66	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

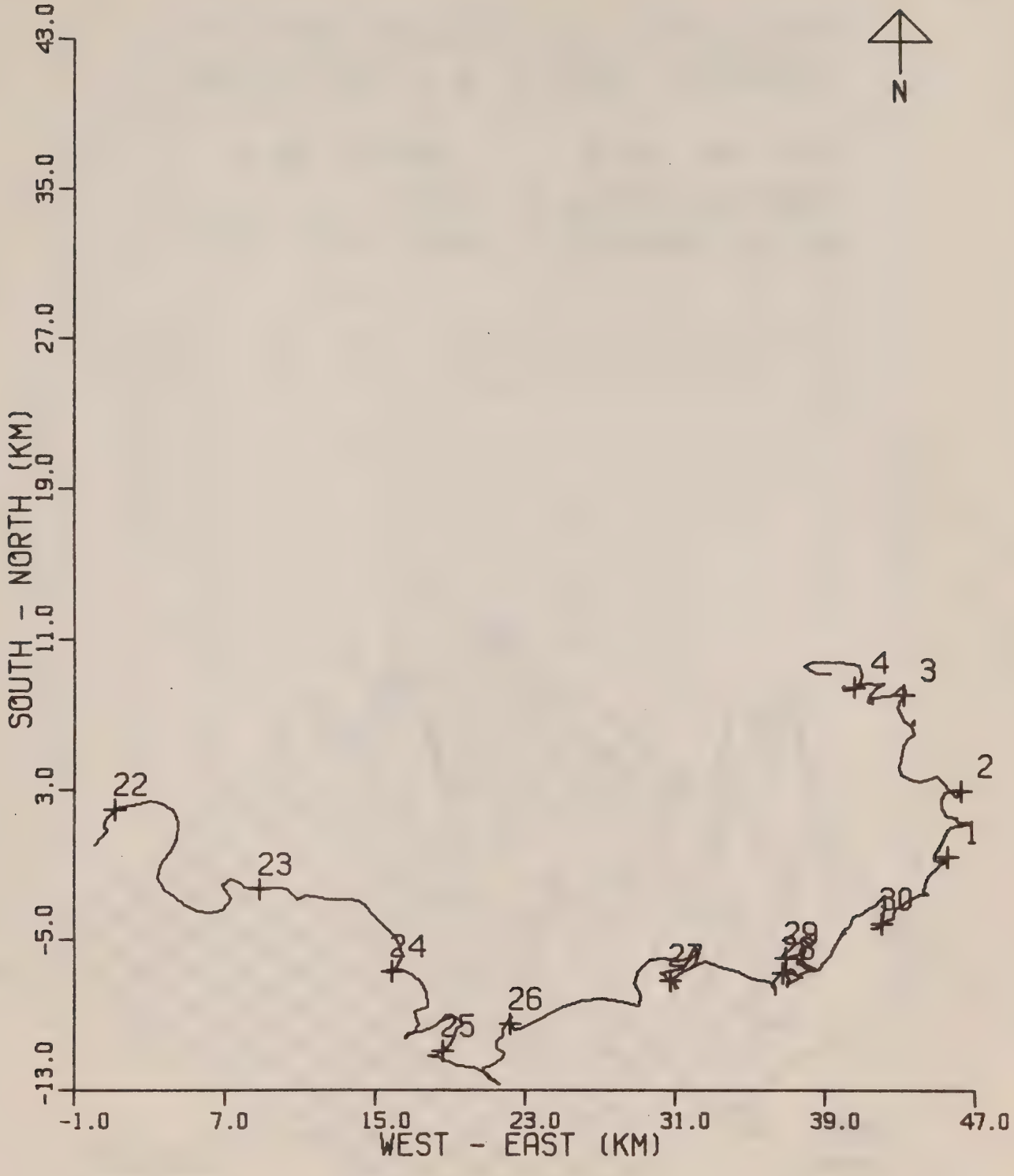
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2923
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 30M, START DATE 01/09/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	50 100 150 200 250
8.02	0	0	
8.06	0	0	
8.10	3	0	*
8.14	13	0	***
8.18	11	0	**
8.22	3	0	*
8.26	8	0	**
8.30	6	0	*
8.34	14	0	***
8.38	159	5	**********
8.42	183	6	**********
8.46	210	7	**********
8.50	140	5	**********
8.54	102	3	**********
8.58	158	5	**********
8.62	105	4	**********
8.66	122	4	**********
8.70	125	4	**********
8.74	84	3	**********
8.78	188	6	**********
8.82	100	3	**********
8.86	77	3	**********
8.90	52	2	**********
8.94	77	3	**********
8.98	170	6	**********
9.02	125	4	**********
9.06	137	5	**********
9.10	152	5	**********
9.14	143	5	**********
9.18	168	6	**********
9.22	33	1	*******
9.26	18	1	****
9.30	8	0	**
9.34	13	0	***
9.38	15	1	***
9.42	1	0	
9.46	0	0	
9.50	0	0	
9.54	0	0	
9.58	0	0	

NO. OF SAMPLES OVER 9.60 = 0
NO. OF SAMPLES UNDER 8.00 = 0
TOTAL NO. OF OBSERVATIONS = 2923
SAMPLE INTERVAL = 10 MINUTES



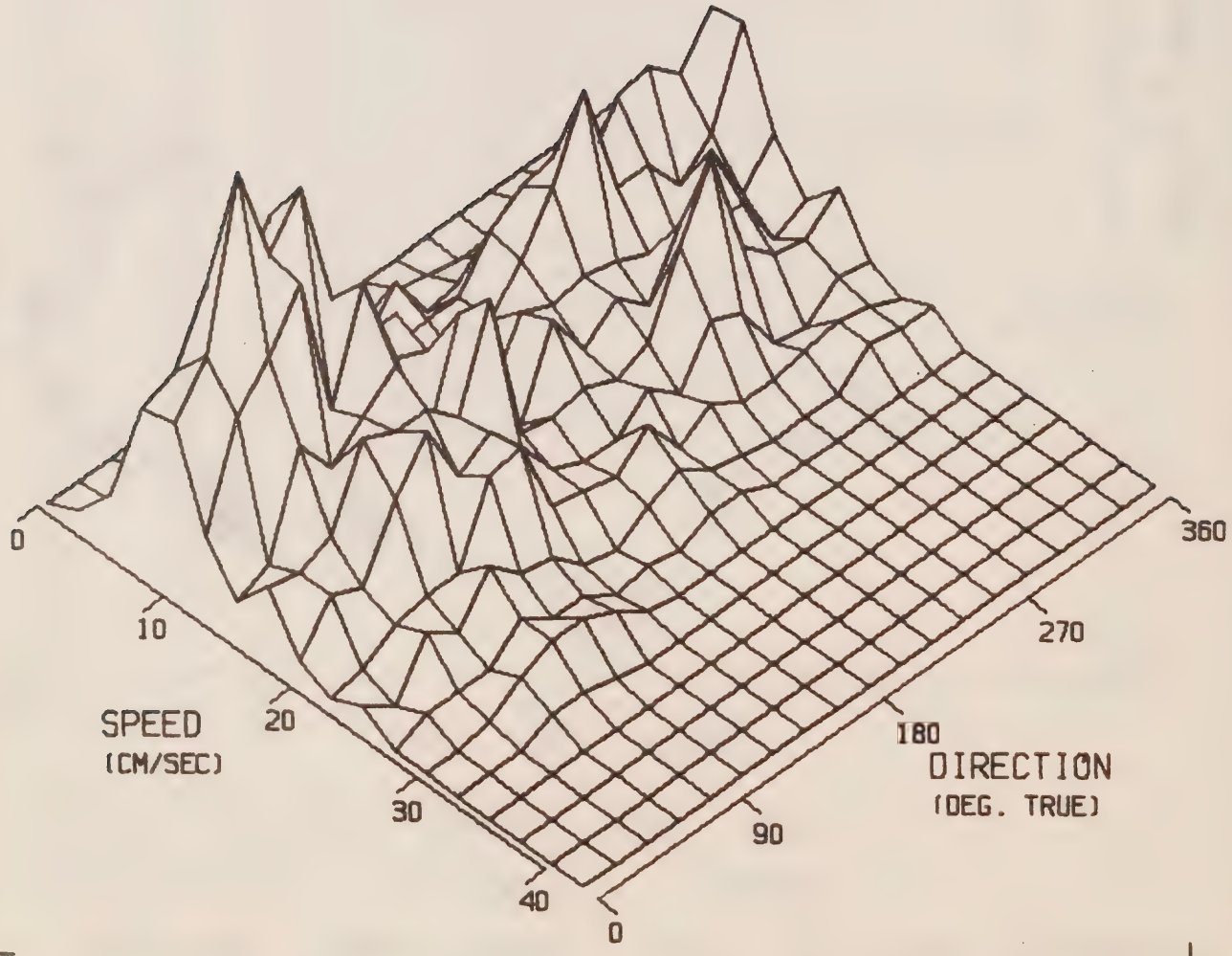
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 21/ 9/72 ENDING DATE: 4/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30 M.
STARTING DATE: 21/ 9/72
NO. OF SAMPLES = 1840



STN. NO. MS-4 DEPTH 30 M.

STARTING DATE:21/ 9/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	001	014	029	009	011	001	002						67
15- 29		022	045	011	013	004	001						96
30- 44	001	030	062	027	013	005	006						144
45- 59	001	019	047	029	016	010	006	004					132
60- 74	001	026	048	022	025	007	004	003	002				138
75- 89		025	044	017	023	012	012	008					141
90-104		013	036	036	019	016	004	007					131
105-119	001	005	030	018	017	017	009	005					102
120-134		008	015	013	025	017	001	004					83
135-149		006	021	028	020	009	001						85
150-164		003	005	008	008	008	001						33
165-179	001	008	006	003	007	004	002						31
180-194	001	006	013	006	005	003	003						37
195-209	002	001	014	015	007	008	004						51
210-224	001	010	012	008	009	004	004						48
225-239		008	015	015	008	004	001						51
240-254		014	033	007	005	004	001						64
255-269		010	030	008	012	009							69
270-284	002	009	014	013	030	002							70
285-299		012	015	015	013	004							59
300-314	003	014	018	010	007	003							55
315-329	001	014	016	016	005	002	004						58
330-344		016	012	008	005	002	003						46
345-359	001	018	014	003	007	004	002						49
	17	594		310		71		2		0			1840
	311		345		159		31		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 21/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 30 60 90 120 150
4	0	0	
12	1	0	
20	4	0	*
28	6	0	**
36	13	1	****
44	29	2	**********
52	38	2	**************
60	84	5	********************************
68	102	6	**************************************
76	51	3	*******************
84	120	7	**
92	117	6	***
100	116	6	***
108	128	7	**
116	113	6	**
124	85	5	********************************
132	60	3	**********************
140	60	3	**********************
148	72	4	***************************
156	68	4	**************************
164	67	4	*************************
172	70	4	***************************
180	63	3	************************
188	61	3	**********************
196	49	3	******************
204	39	2	**************
212	41	2	***************
220	43	2	***************
228	25	1	********
236	22	1	*******
244	12	1	****
252	17	1	******
260	14	1	*****
268	11	1	****
276	6	0	**
284	6	0	**
292	7	0	**
300	9	0	***
308	6	0	**
316	3	0	*

NO. OF SAMPLES OVER 320 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1840
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M. START DATE 21/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	55	3	**********
15	44	2	********
25	76	4	**************
35	106	6	********************
45	74	4	**************
55	95	5	******************
65	86	5	****************
75	100	5	******************
85	95	5	******************
95	91	5	*****************
105	75	4	**************
115	58	3	**********
125	54	3	**********
135	65	4	************
145	51	3	**********
155	20	1	****
165	23	1	*****
175	17	1	****
185	25	1	*****
195	28	2	******
205	39	2	********
215	24	1	*****
225	38	2	********
235	37	2	********
245	38	2	********
255	54	3	**********
265	43	2	********
275	49	3	**********
285	41	2	********
295	36	2	********
305	32	2	*******
315	45	2	*********
325	37	2	********
335	29	2	*******
345	28	2	******
355	34	2	*******
365	0	0	
375	0	0	
385	0	0	
395	0	0	

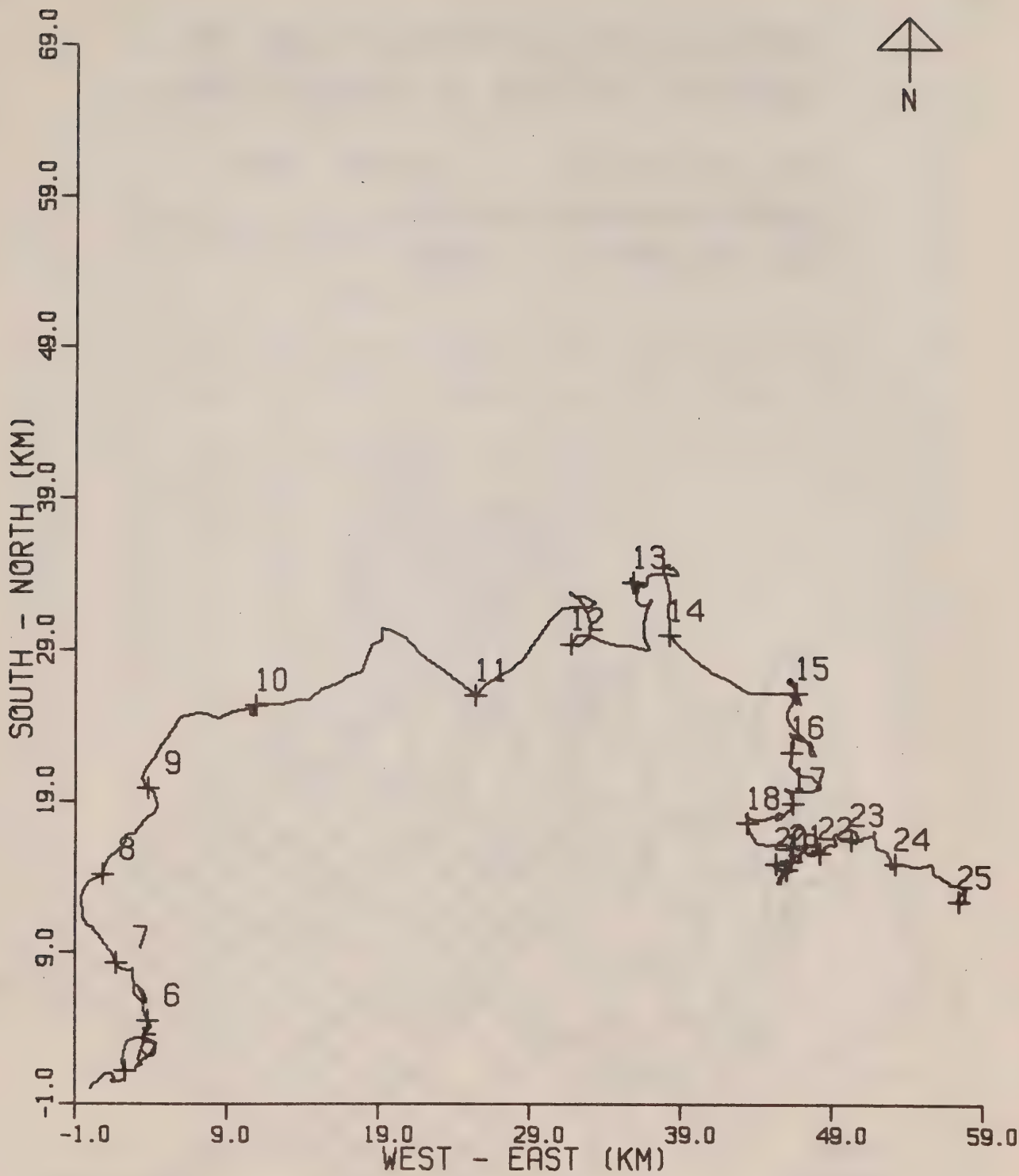
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1840
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 30M. START DATE 21/09/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 70 . 140 . 210 . 280 . 350 .
8.02	0	0	
8.06	0	0	
8.10	0	0	
8.14	0	0	
8.18	0	0	
8.22	0	0	
8.26	0	0	
8.30	21	1	***
8.34	115	6	**********
8.38	327	18	**********
8.42	133	7	**********
8.46	185	10	**********
8.50	96	5	**********
8.54	52	3	*******
8.58	135	7	**********
8.62	66	4	*********
8.66	61	3	*********
8.70	71	4	**********
8.74	59	3	********
8.78	94	5	**********
8.82	50	3	*******
8.86	58	3	********
8.90	47	3	*******
8.94	69	4	**********
8.98	110	6	**********
9.02	34	2	*****
9.06	18	1	***
9.10	21	1	***
9.14	14	1	**
9.18	4	0	*
9.22	1	0	
9.26	1	0	
9.30	0	0	
9.34	0	0	
9.38	0	0	
9.42	0	0	
9.46	0	0	
9.50	0	0	
9.54	0	0	
9.58	0	0	

NO. OF SAMPLES OVER 9.60 = 0
NO. OF SAMPLES UNDER 8.00 = 0
TOTAL NO. OF OBSERVATIONS = 1840
SAMPLE INTERVAL = 10 MINUTES



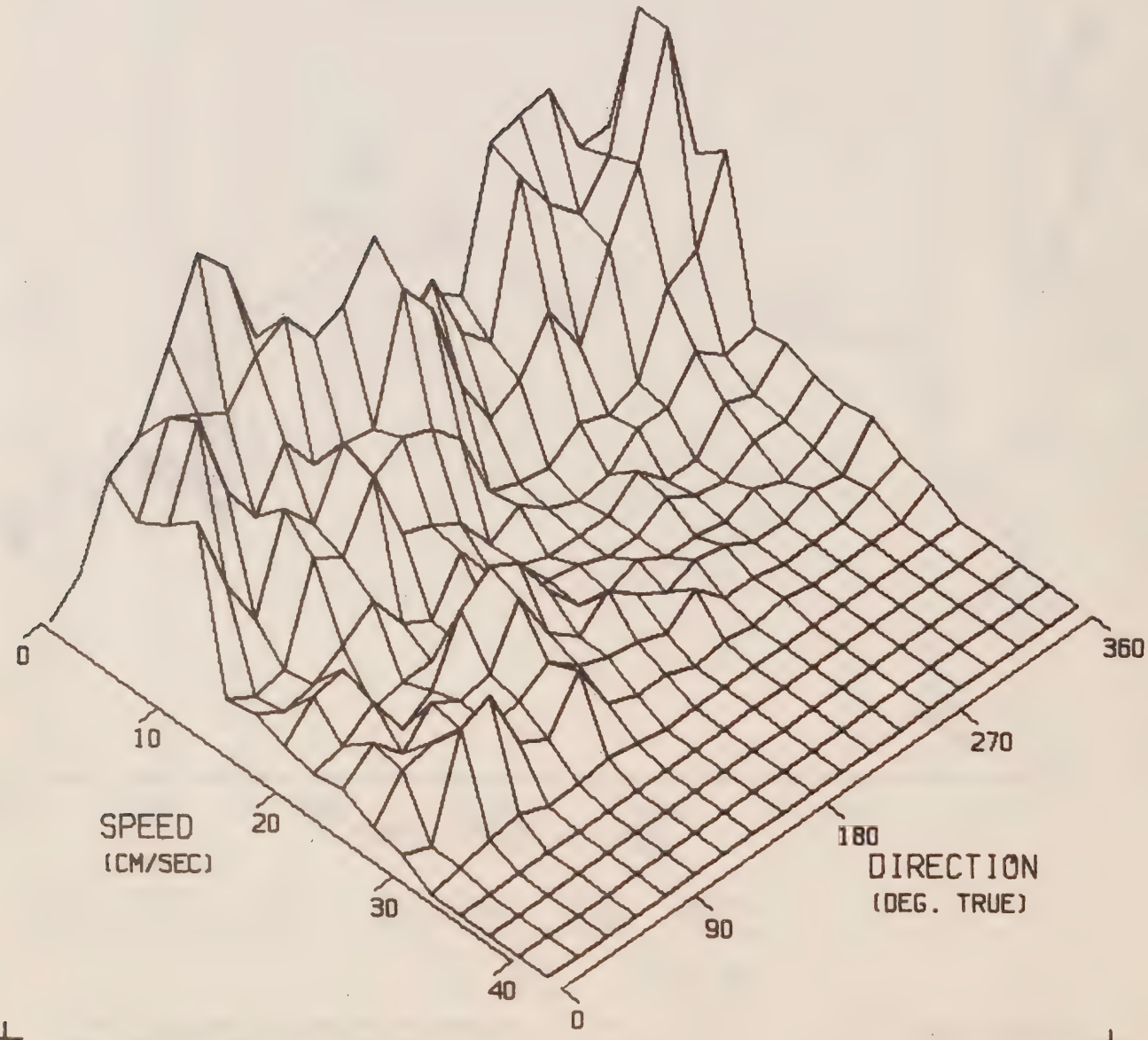
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 4/10/72 ENDING DATE: 25/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30 M.
STARTING DATE: 4/10/72
NO. OF SAMPLES = 2968



STN. NO. HS-4 DEPTH 30 M.

STARTING DATE: 4/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	007	031	033	023	011	006	008	002					121
15- 29	011	048	054	010	011	011	011	005	001				162
30- 44	012	055	042	013	009	015	010	018	001				175
45- 59	016	052	031	020	009	003	015	017					163
60- 74	012	063	026	030	009	005	008	017	004				174
75- 89	024	073	036	018	009	005	008	006					179
90-104	007	054	039	045	010	018	011	006					190
105-119	003	039	023	024	005	012	017	006	001				130
120-134	002	039	032	019	005	021	021	012					151
135-149	002	042	035	022	007	011	008	006	001				134
150-164	006	044	047	015	008	009	006	005					140
165-179	005	040	041	015	006	006	006	003					122
180-194	014	027	036	008		003	009						97
195-209	010	033	022	003	001	005	005						79
210-224	005	031	012	005	002	003	005	002					65
225-239	009	023	015	001	001	002	004	001					56
240-254	005	020	018	001	001	001	005	002					53
255-269	005	066	023	004	008	001	001						108
270-284	014	054	012	006	001								87
285-299	010	046	026	008		002							92
300-314	010	040	028	007									85
315-329	011	045	039	020	006	002	002						125
330-344	010	046	064	016	006	001	001						144
345-359	008	039	056	013	004	007	008	001					136
	218	790		129		169		8		0			2968
	1050		346		149		109		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 04/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60 120 180 240 300
4	0	0	
12	7	0	*
20	41	1	*******
28	111	4	**********
36	132	4	**********
44	182	6	**********
52	240	8	**********
60	254	9	**********
68	199	7	**********
76	102	3	**********
84	194	7	**********
92	193	7	**********
100	159	5	**********
108	136	5	**********
116	108	4	**********
124	102	3	**********
132	80	3	**********
140	62	2	**********
148	63	2	**********
156	39	1	*******
164	30	1	*****
172	20	1	***
180	32	1	*****
188	24	1	****
196	23	1	****
204	23	1	****
212	32	1	*****
220	40	1	*******
228	41	1	*******
236	35	1	******
244	16	1	***
252	38	1	******
260	34	1	******
268	29	1	*****
276	30	1	*****
284	30	1	*****
292	31	1	*****
300	21	1	****
308	24	1	****
316	3	0	*

NO. OF SAMPLES OVER 320 = 8
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2968
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M, START DATE 04/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	96	3	**********
15	75	3	********
25	129	4	**************
35	114	4	************
45	100	3	**********
55	118	4	************
65	123	4	**************
75	116	4	************
85	120	4	*************
95	126	4	**************
105	93	3	**********
115	89	3	*********
125	109	4	************
135	96	3	**********
145	85	3	*********
155	85	3	*********
165	98	3	**********
175	71	2	********
185	67	2	*******
195	64	2	*******
205	48	2	*****
215	40	1	****
225	44	1	*****
235	37	1	****
245	30	1	***
255	55	2	******
265	77	3	********
275	50	2	******
285	62	2	*******
295	70	2	********
305	56	2	******
315	73	2	********
325	81	3	*********
335	95	3	**********
345	95	3	**********
355	81	3	*********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

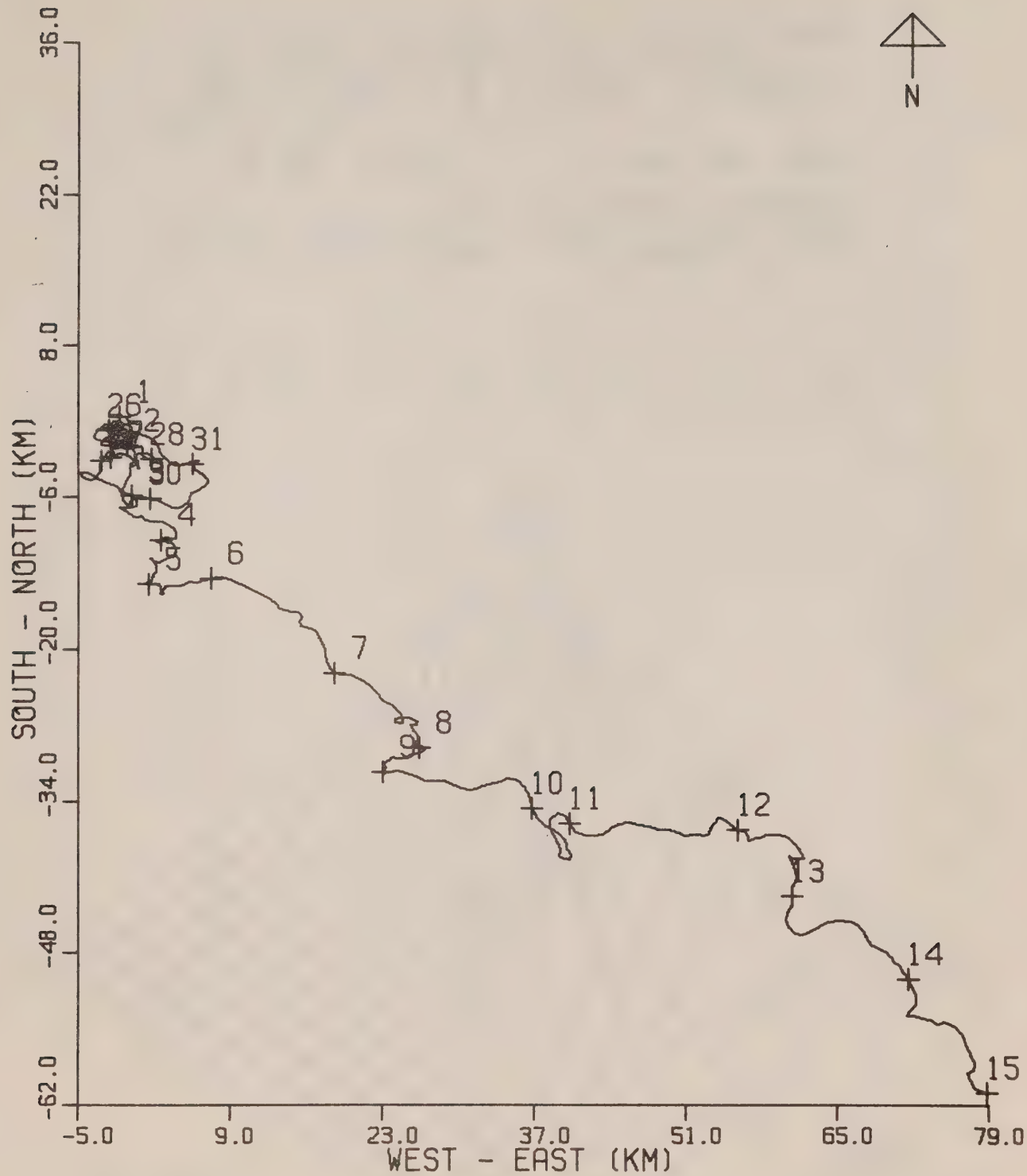
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2968
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 30M. START DATE 04/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	120 240 360 480 600
8.31	0	0	
8.33	9	0	*
8.35	0	0	
8.37	2	0	
8.39	0	0	
8.41	2	0	
8.43	19	1	**
8.45	0	0	
8.47	25	1	**
8.49	0	0	
8.51	30	1	***
8.53	114	4	**********
8.55	0	0	
8.57	167	6	***************
8.59	0	0	
8.61	235	8	*********************
8.63	617	21	**
8.65	0	0	
8.67	457	15	**
8.69	342	12	*******************************
8.71	0	0	
8.73	251	8	**********************
8.75	0	0	
8.77	157	5	**************
8.79	241	8	**********************
8.81	0	0	
8.83	78	3	*******
8.85	0	0	
8.87	60	2	*****
8.89	59	2	*****
8.91	0	0	
8.93	46	2	****
8.95	0	0	
8.97	29	1	**
8.99	19	1	**
9.01	0	0	
9.03	6	0	*
9.05	0	0	
9.07	2	0	
9.09	1	0	

NO. OF SAMPLES OVER 9.10 = 0
NO. OF SAMPLES UNDER 8.30 = 0
TOTAL NO. OF OBSERVATIONS = 2968
SAMPLE INTERVAL = 10 MINUTES
C4 RELEASED.



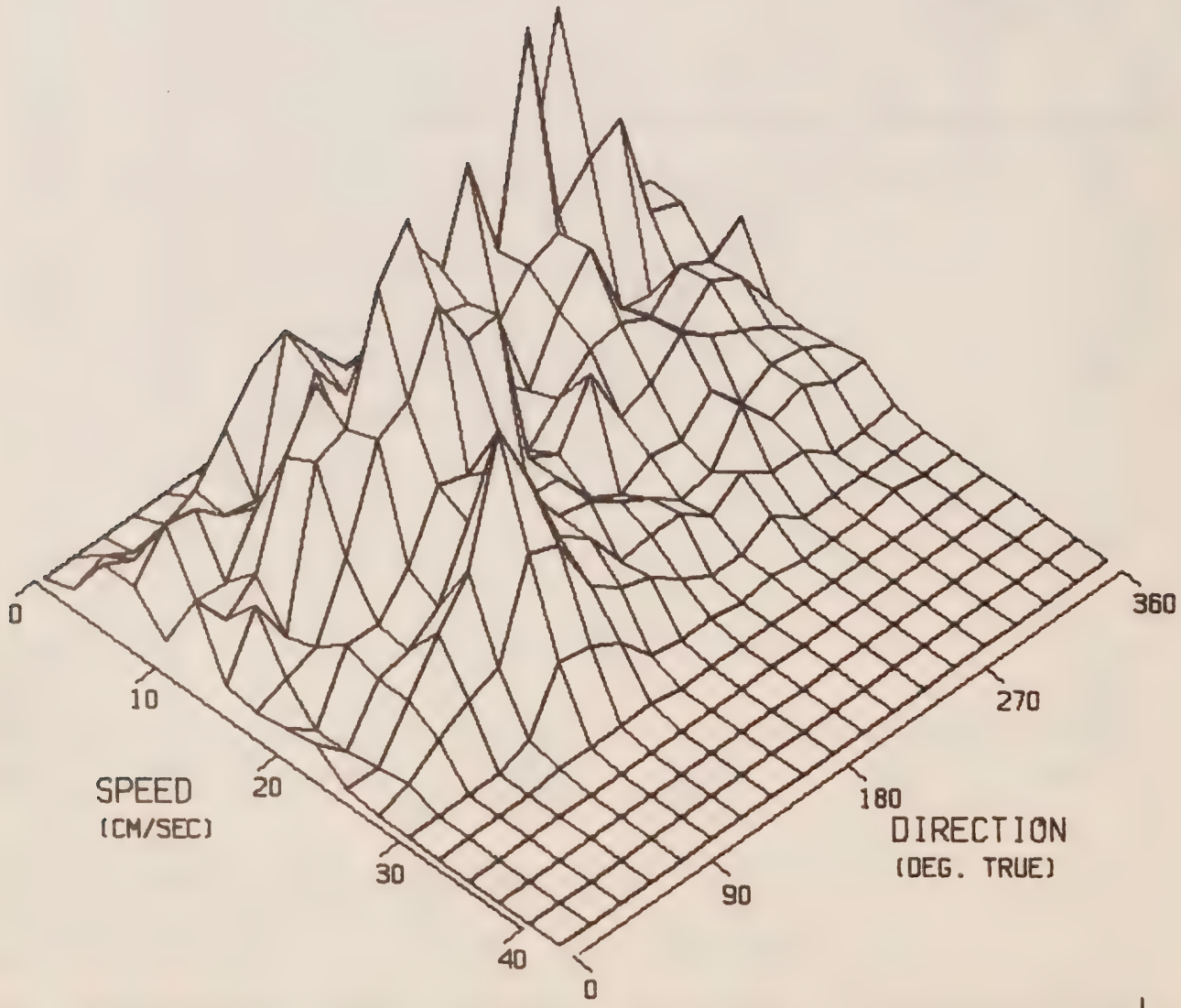
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 25/10/72 ENDING DATE: 15/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30 M.
STARTING DATE: 25/10/72
NO. OF SAMPLES = 3000



STN. NO. HS-4 DEPTH 30 M.

STARTING DATE:25/10/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	001	016	005	006	005	004							37
15- 29	004	014	012	018	004		002	001					55
30- 44	001	017	011	009	012	008	004						62
45- 59	001	015	012	018	007	012	020	002					87
60- 74	001	015	024	052	023	013	013	003					144
75- 89	002	021	026	043	039	019	028	006					184
90-104	004	031	046	038	040	028	052	009					248
105-119		038	034	080	042	032	042	016	001				285
120-134	003	024	030	063	045	029	036	011					241
135-149	001	020	047	053	045	032	019	011					228
150-164	001	016	045	053	043	016	018	005					197
165-179	001	016	010	039	021	018	014	003					122
180-194	001	017	014	018	013	011	011						85
195-209	005	024	013	015	011	010	007	001					86
210-224	003	041	018	017	017	010	008						114
225-239		022	027	022	010	005	002						88
240-254	001	030	036	025	014	005	006	002					119
255-269		051	035	024	010	004	009						133
270-284		033	016	017	018	014	003						101
285-299		050	010	018	014	010	003						105
300-314	002	053	008	018	010	005	002	001					99
315-329	001	031	011	014	009	012							78
330-344	002	018	003	018	008	007							56
345-359	001	013	012	011	003	005	001						46
	36	505	463	300	1	0	3000						
	626	689	309	71	0	0							

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 25/10/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
4	0	0	
12	1	0	
20	8	0	**
28	13	0	***
36	31	1	******
44	59	2	**********
52	126	4	**************************
60	182	6	**
68	177	6	***
76	65	2	**********
84	95	3	********************
92	95	3	********************
100	83	3	*****************
108	97	3	********************
116	135	5	****************************
124	129	4	***************************
132	144	5	******************************
140	124	4	**************************
148	142	5	*****************************
156	150	5	*******************************
164	132	4	***************************
172	110	4	**********************
180	74	2	***************
188	78	3	****************
196	69	2	**************
204	77	3	****************
212	70	2	**************
220	71	2	**************
228	54	2	**********
236	81	3	*****************
244	38	1	********
252	63	2	************
260	62	2	************
268	54	2	**********
276	39	1	********
284	29	1	******
292	19	1	****
300	14	0	***
308	6	0	*
316	3	0	*

NO. OF SAMPLES OVER 320 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M, START DATE 25/10/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	29	1	******
15	24	1	*****
25	41	1	********
35	44	1	*********
45	48	2	**********
55	58	2	************
65	110	4	************************
75	109	4	************************
85	117	4	*************************
95	159	5	**********************************
105	195	7	**
115	197	7	**
125	158	5	**********************************
135	159	5	**********************************
145	139	5	*****************************
155	130	4	****************************
165	107	4	**********************
175	72	2	***************
185	59	2	************
195	49	2	**********
205	62	2	************
215	73	2	***************
225	73	2	***************
235	55	2	***********
245	73	2	***************
255	99	3	*********************
265	87	3	******************
275	67	2	**************
285	62	2	************
295	72	2	***************
305	63	2	**************
315	58	2	************
325	54	2	***********
335	34	1	*******
345	35	1	*******
355	29	1	******
365	0	0	
375	0	0	
385	0	0	
395	0	0	

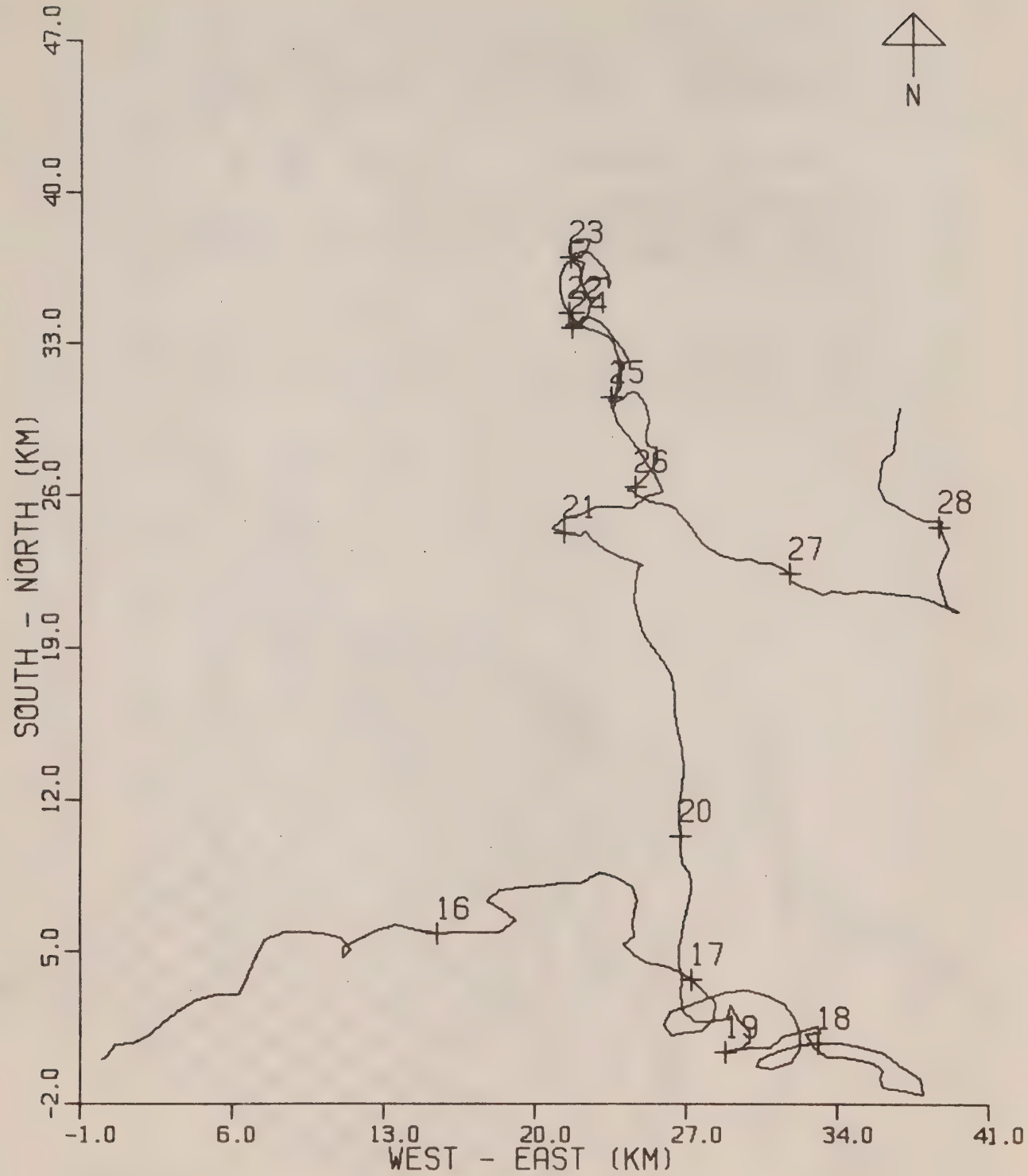
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 30M, START DATE 25/10/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	120 240 360 480 600
8.16	0	0	
8.18	0	0	
8.20	0	0	
8.22	0	0	
8.24	7	0	*
8.26	19	1	**
8.28	0	0	
8.30	31	1	***
8.32	0	0	
8.34	48	2	****
8.36	95	3	********
8.38	0	0	
8.40	71	2	******
8.42	0	0	
8.44	99	3	********
8.46	176	6	**********
8.48	0	0	
8.50	189	6	**********
8.52	0	0	
8.54	202	7	**********
8.56	273	9	**********
8.58	0	0	
8.60	424	14	**********
8.62	0	0	
8.64	318	11	**********
8.66	289	10	**********
8.68	0	0	
8.70	316	11	**********
8.72	0	0	
8.74	227	8	**********
8.76	157	5	**********
8.78	0	0	
8.80	47	2	****
8.82	0	0	
8.84	4	0	
8.86	3	0	
8.88	0	0	
8.90	5	0	
8.92	0	0	
8.94	0	0	

NO. OF SAMPLES OVER 8.95 = 0
NO. OF SAMPLES UNDER 8.15 = 0
TOTAL NO. OF OBSERVATIONS = 3000
SAMPLE INTERVAL = 10 MINUTES



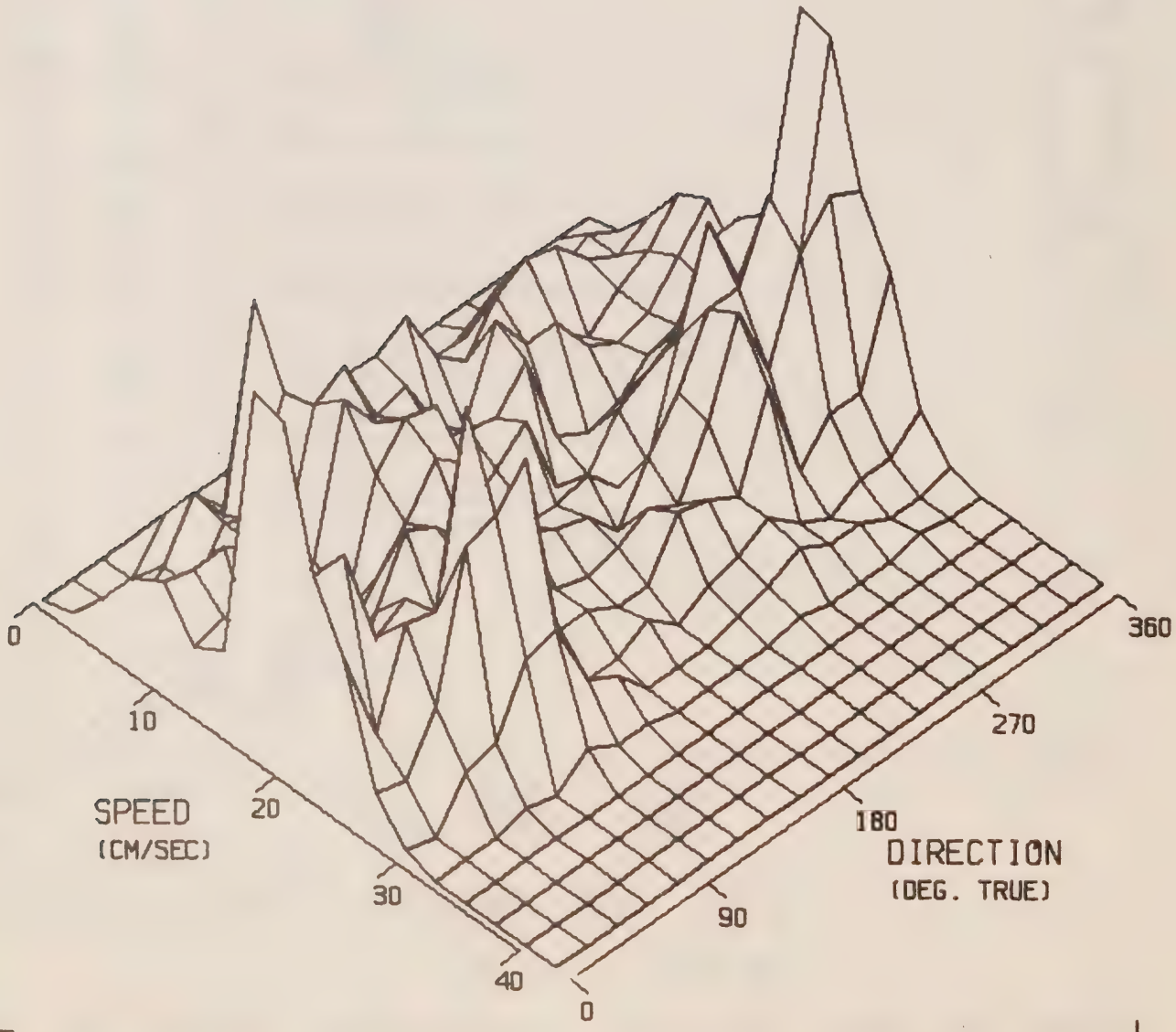
STN. NO. HS-4

DEPTH 30 M.

STARTING DATE: 15/11/72 ENDING DATE: 28/11/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 30 M.
STARTING DATE: 15/11/72
NO. OF SAMPLES = 1942



STN. NO. HS-4 DEPTH 30 M.

STARTING DATE:15/11/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO	
DIR	039	079	119	159	199	239	279	319	359	399	439	479	
0- 14	001	004	013	011	047	027	014	002					119
15- 29		001	014	007	022	023	006						73
30- 44		004	005	004	008	012	015	002					50
45- 59	002	015	012	003	002	010	028	008					80
60- 74	003	006	009	003	005	020	032	011					89
75- 89		007	012	003	017	014	042	019					114
90-104	001	026	021	024	018	016	033	024					163
105-119		029	032	020	022	015	022	008					148
120-134		007	024	024	012	012	010	005	001				95
135-149		018	017	024	017	011	004	002					93
150-164	002	014	016	009	007	007	003	002					60
165-179	002	017	015	014	009	007	002						66
180-194		017	007	010	005	001	004						44
195-209	001	017	008	013	004	005	002						50
210-224	001	009	019	005	005	004	006	001					50
225-239		013	012			007	007	002					41
240-254	001	014	011	001	006	003	008	001	001				46
255-269	001	015	010	004	007	014	006	006					63
270-284	001	009	005	006	012	026	013	002					74
285-299		009	003	008	028	016	006						70
300-314		005	002	015	019	016	002	002					61
315-329		006	005	013	022	034	007	002					89
330-344	003	002	011	017	021	023	006						83
345-359		012	010	014	035	034	015	001					121
	19	293		350		293		2		0			1942
	276		252		357		100		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 30M, START DATE 15/11/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	20 40 60 80 100
4	0	0	
12	0	0	
20	3	0	**
28	9	0	*****
36	16	1	********
44	31	2	**********
52	70	4	**********
60	66	3	**********
68	65	3	**********
76	35	2	**********
84	49	3	**********
92	72	4	**********
100	62	3	**********
108	54	3	**********
116	56	3	**********
124	46	2	**********
132	44	2	**********
140	51	3	**********
148	62	3	**********
156	49	3	**********
164	51	3	**********
172	62	3	**********
180	84	4	**********
188	63	3	**********
196	90	5	**********
204	83	4	**********
212	90	5	**********
220	73	4	**********
228	73	4	**********
236	65	3	**********
244	31	2	**********
252	79	4	**********
260	56	3	**********
268	61	3	**********
276	39	2	**********
284	34	2	**********
292	22	1	**********
300	22	1	**********
308	16	1	********
316	6	0	***

NO. OF SAMPLES OVER 320 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1942
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 30M, START DATE 15/11/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	30 60 90 120 150
5	92	5	**********
15	71	4	********
25	33	2	*****
35	36	2	*****
45	42	2	******
55	55	3	********
65	60	3	*********
75	62	3	*********
85	82	4	**********
95	109	6	**********
105	111	6	**********
115	89	5	**********
125	68	4	*********
135	53	3	********
145	65	3	*********
155	39	2	*****
165	42	2	******
175	44	2	******
185	28	1	****
195	29	1	*****
205	35	2	*****
215	36	2	*****
225	31	2	*****
235	25	1	****
245	31	2	*****
255	32	2	*****
265	47	2	*******
275	50	3	********
285	50	3	********
295	46	2	*******
305	40	2	******
315	47	2	*******
325	63	3	*********
335	59	3	*********
345	58	3	*********
355	82	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1942
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

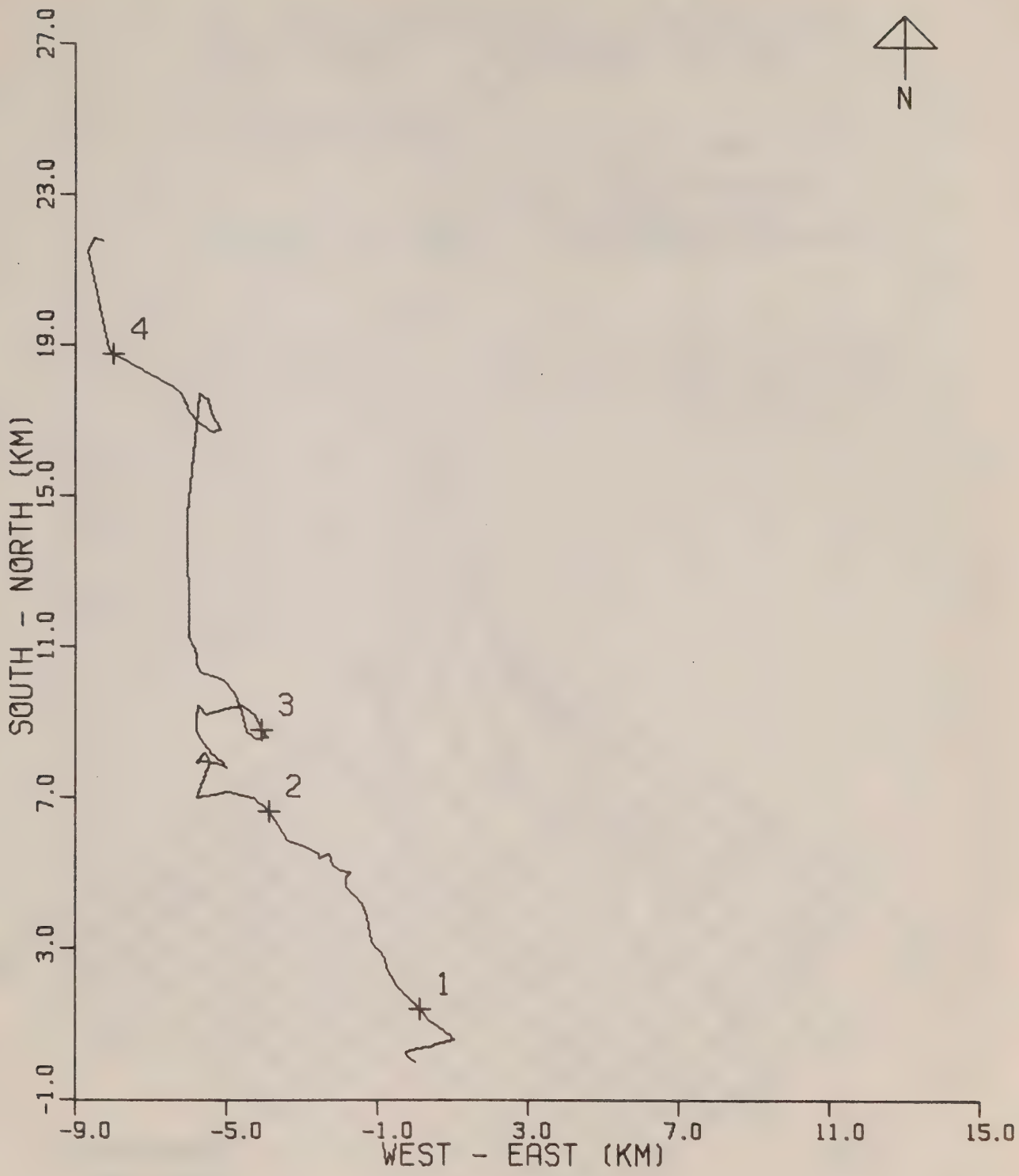
HOWE SOUND HS-4 DEPTH 30M, START DATE 15/11/72

```
MEDIAN  FREQUENCY                40        80        120       160       200
(DEG.C) NO.  PCT .               .         .         .         .         .
 7.82     0    0
 7.86     0    0
 7.90     0    0
 7.94     0    0
 7.98     4    0  *
 8.02    11    1  ***
 8.06     2    0  *
 8.10    12    1  ***
 8.14    64    3  ******************
 8.18    57    3  ***************
 8.22   188   10  ****************************************************
 8.26    90    5  *************************
 8.30    53    3  **************
 8.34    39    2  **********
 8.38    62    3  *****************
 8.42   153    8  ******************************************
 8.46    74    4  ********************
 8.50   113    6  ********************************
 8.54   100    5  ****************************
 8.58    81    4  **********************
 8.62   115    6  ********************************
 8.66   160    8  *********************************************
 8.70   167    9  ***********************************************
 8.74   199   10  ********************************************************
 8.78   144    7  ****************************************
 8.82    30    2  ********
 8.86    13    1  ***
 8.90    11    1  ***
 8.94     0    0
 8.98     0    0
 9.02     0    0
 9.06     0    0
 9.10     0    0
 9.14     0    0
 9.18     0    0
 9.22     0    0
 9.26     0    0
 9.30     0    0
 9.34     0    0
 9.38     0    0
```

NO. OF SAMPLES OVER 9.40 = 0
NO. OF SAMPLES UNDER 7.80 = 0
TOTAL NO. OF OBSERVATIONS = 1942
SAMPLE INTERVAL = 10 MINUTES

2 RELEASED.

DATA FOR 130-METRE DEPTH



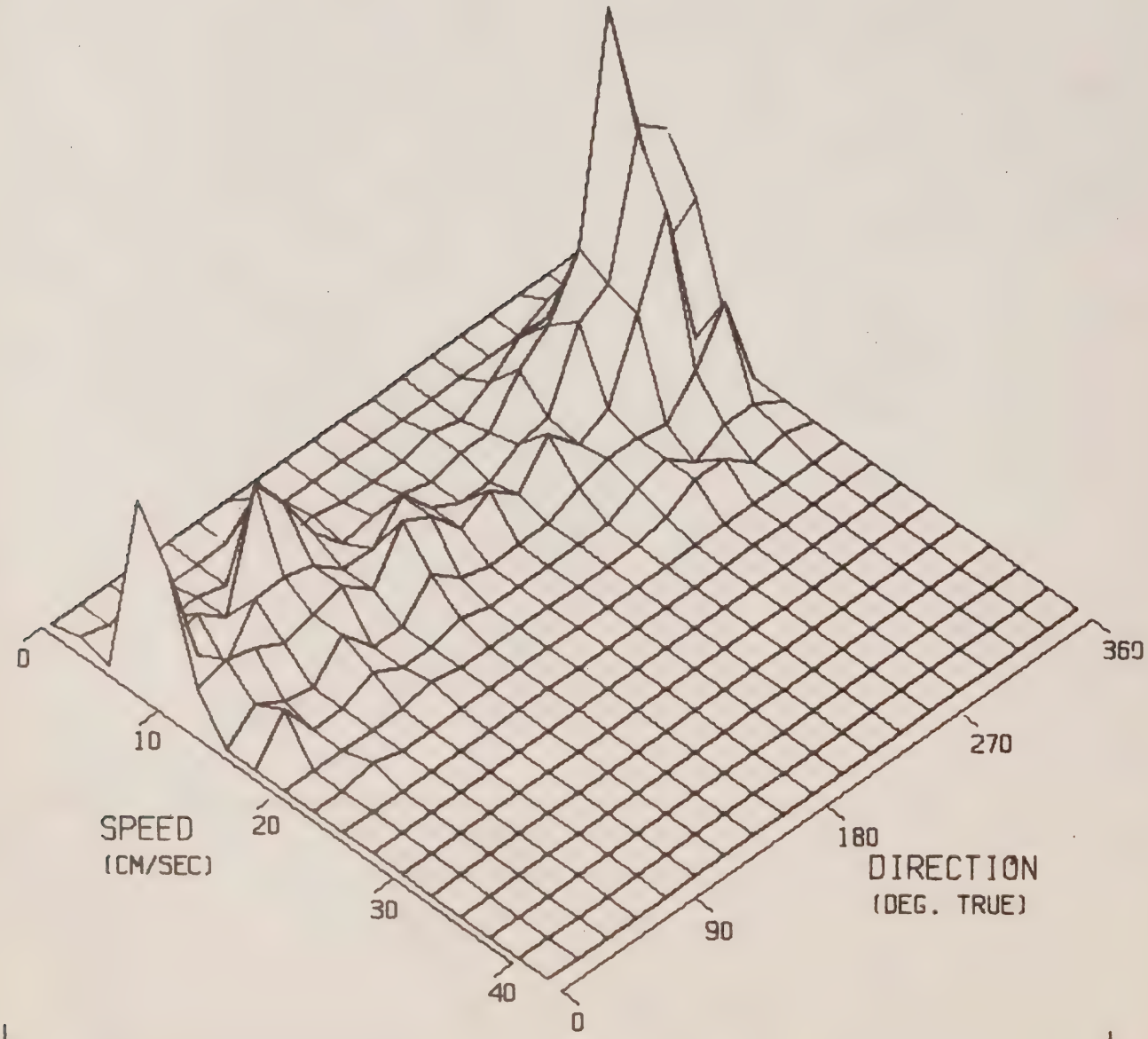
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 30/11/71 ENDING DATE: 4/12/71

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 30/11/71
NO. OF SAMPLES = 519



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE:30/11/71
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	001	007	020	003	001								32
15- 29		003	001	006	004								14
30- 44		002	001	005		001							9
45- 59		001	002										3
60- 74		003	009	004	001								17
75- 89		009	009	004	001								23
90-104		015	004	005	001								25
105-119	002	005	005										12
120-134	001	002	002	002									7
135-149			003	009	001								13
150-164		001	009	003									13
165-179		001	004	001									6
180-194			002	001									3
195-209				003									3
210-224		002		001									3
225-239				005									5
240-254		002	006	003	002								13
255-269		004	004	003	001								12
270-284		005	009	004	005								23
285-299		010	021	003	002								36
300-314		017	022	013	001	001							54
315-329	002	035	034	018	001								90
330-344		023	014	013	004								54
345-359		013	016	005									34
	6		197		25		0		0		0		504
		160		114		2		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 15

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 30/11/71

MEDIAN (MM/S)	FREQUENCY NO.	PCT	20 40 60 80 100
3	0	0	
9	0	0	
15	0	0	
21	1	0	*
27	1	0	*
33	4	1	**
39	5	1	***
45	5	1	***
51	4	1	**
57	23	4	**********
63	25	5	**********
69	65	13	**********
75	33	6	**********
81	18	3	*********
87	44	8	**********
93	17	3	*********
99	45	9	**********
105	22	4	**********
111	38	7	**********
117	13	3	*******
123	40	8	**********
129	17	3	*********
135	25	5	**********
141	4	1	**
147	15	3	********
153	6	1	***
159	7	1	****
165	6	1	***
171	1	0	*
177	4	1	**
183	4	1	**
189	5	1	***
195	2	0	*
201	3	1	**
207	0	0	
213	1	0	*
219	0	0	
225	0	0	
231	1	0	*
237	0	0	

NO. OF SAMPLES OVER 240 = 15
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 519
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 30/11/71

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	. 20 40 60 80 100 . . . . .
5	26	5	**********
15	15	3	********
25	11	2	******
35	7	1	****
45	6	1	***
55	2	0	*
65	9	2	*****
75	20	4	**********
85	11	2	******
95	15	3	********
105	15	3	********
115	6	1	***
125	6	1	***
135	2	0	*
145	14	3	*******
155	9	2	*****
165	5	1	***
175	4	1	**
185	1	0	*
195	3	1	**
205	1	0	*
215	3	1	**
225	0	0	
235	5	1	***
245	6	1	***
255	13	3	*******
265	6	1	***
275	13	3	*******
285	27	5	**********
295	20	4	**********
305	35	7	**********
315	58	11	**********
325	57	11	**********
335	35	7	**********
345	32	6	**********
355	21	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

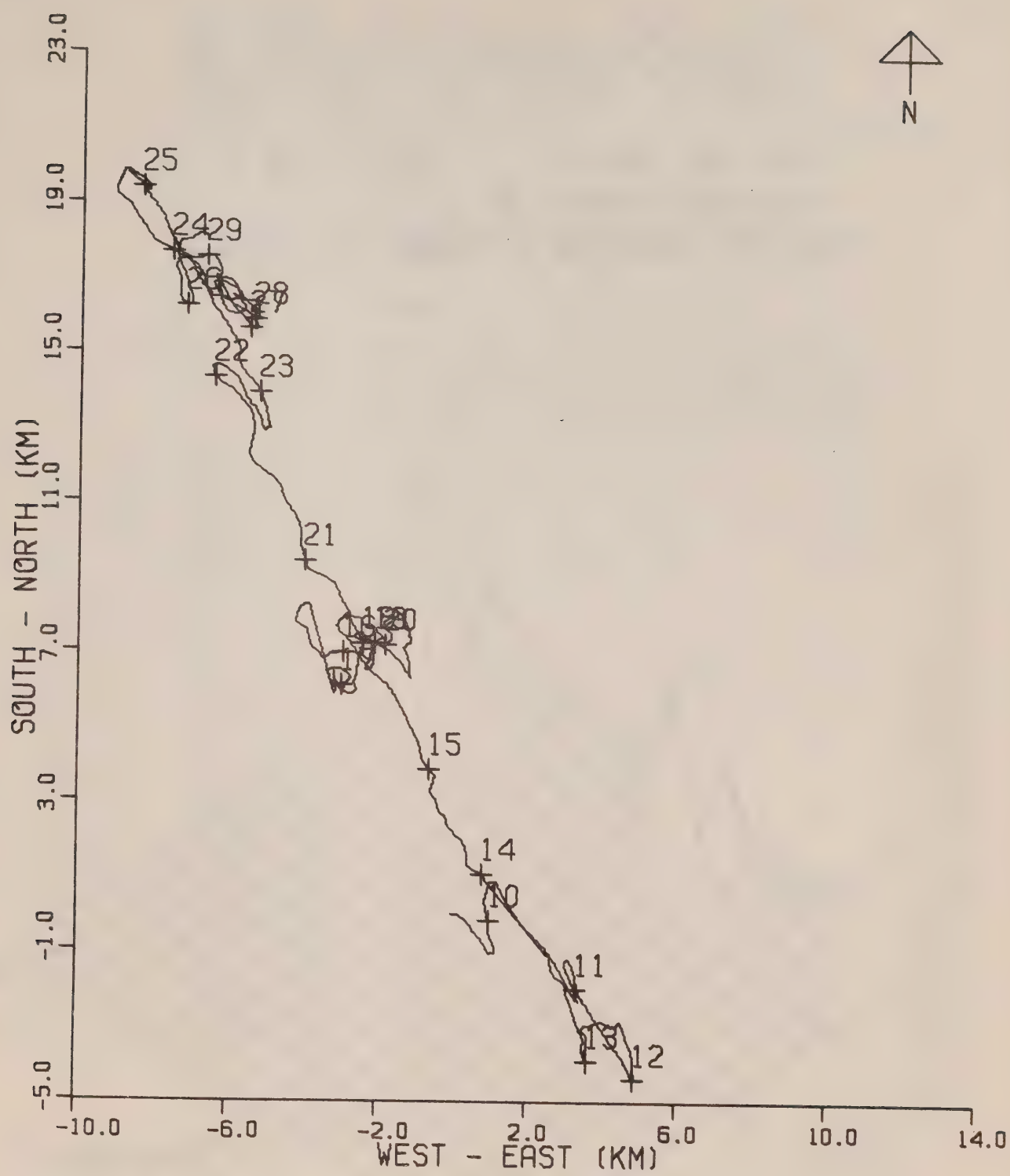
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 519
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 30/11/71

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 60 120 180 240 300
8.61	0	0	
8.63	0	0	
8.65	0	0	
8.67	0	0	
8.69	0	0	
8.71	0	0	
8.73	0	0	
8.75	0	0	
8.77	1	0	
8.79	3	1	*
8.81	5	1	*
8.83	0	0	
8.85	6	1	*
8.87	25	5	****
8.89	43	8	********
8.91	0	0	
8.93	18	3	***
8.95	43	8	********
8.97	261	50	**
8.99	77	15	***************
9.01	0	0	
9.03	8	2	*
9.05	0	0	
9.07	0	0	
9.09	0	0	
9.11	0	0	
9.13	0	0	
9.15	0	0	
9.17	0	0	
9.19	0	0	
9.21	0	0	
9.23	0	0	
9.25	0	0	
9.27	0	0	
9.29	0	0	
9.31	0	0	
9.33	0	0	
9.35	0	0	
9.37	0	0	
9.39	0	0	

NO. OF SAMPLES OVER 9.40 = 0
NO. OF SAMPLES UNDER 8.60 = 29
TOTAL NO. OF OBSERVATIONS = 519
SAMPLE INTERVAL = 10 MINUTES



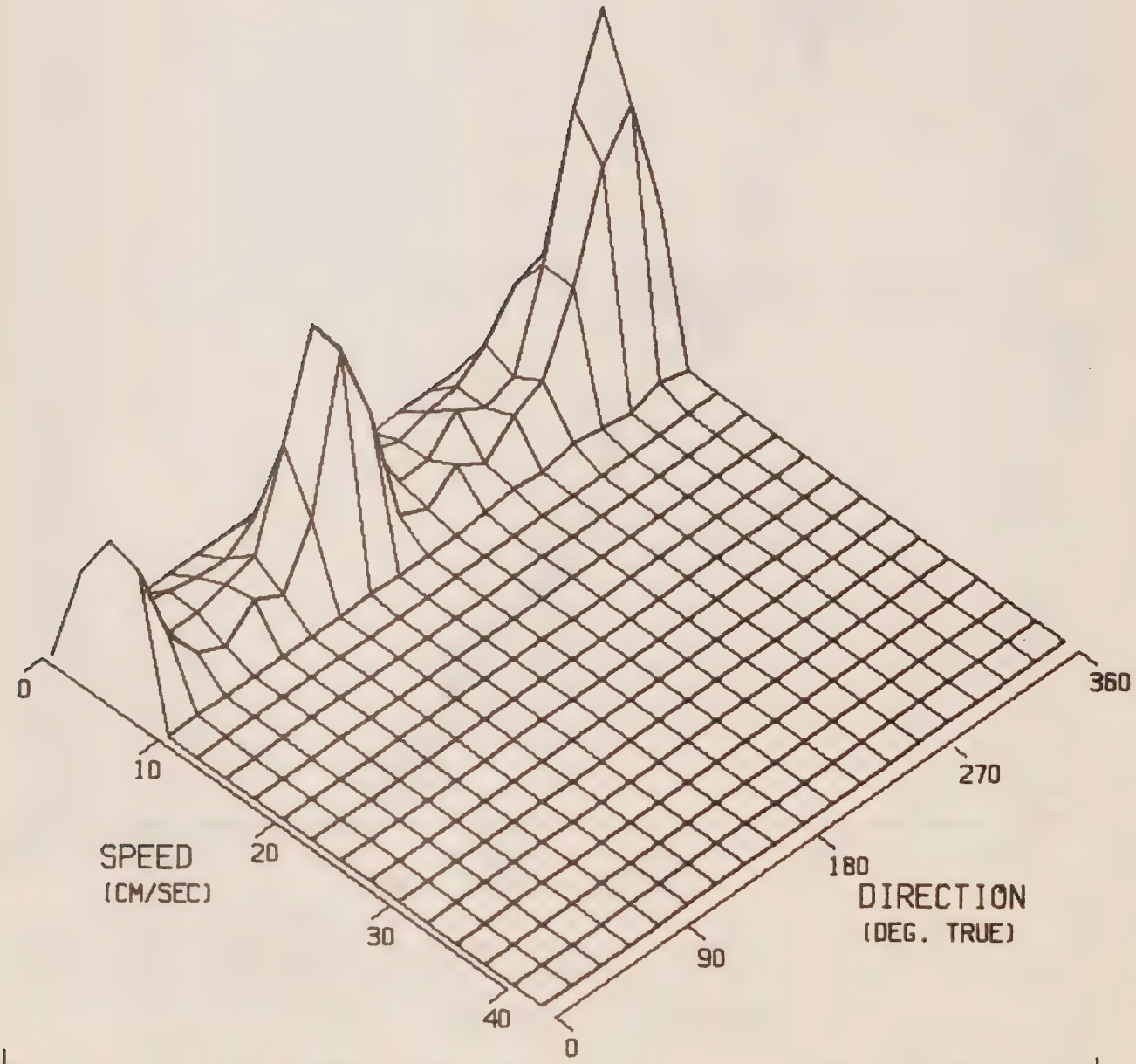
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 9/ 2/72 ENDING DATE: 29/ 2/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 9/ 2/72
NO. OF SAMPLES = 2869



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE: 9/ 2/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
DIR													
0- 14	042	116	003										161
15- 29	031	076	003										110
30- 44	017	017	001										35
45- 59	012	016	006										34
60- 74	016	019	002										37
75- 89	005	031	001										37
90-104	006	033	002										41
105-119	015	052	001										68
120-134	019	119	007										145
135-149	044	229	019										292
150-164	054	187	008										249
165-179	034	071											105
180-194	016	022											38
195-209	014	008											22
210-224	008	020	001										29
225-239	006	020	005										31
240-254	014	029	003										46
255-269	012	024	008										44
270-284	015	033	019										67
285-299	036	073	016										125
300-314	048	134	016										198
315-329	048	234	012										294
330-344	056	289	035										380
345-359	068	197	012										277
	636		180	0		0		0		0			2865
		2049		0	0		0		0		0		

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 4

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 09/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60 120 180 240 300
2	0	0	
6	0	0	
10	0	0	
14	100	3	**********
18	67	2	**********
22	88	3	**********
26	104	4	**********
30	161	6	**********
34	116	4	**********
38	151	5	**********
42	146	5	**********
46	173	6	**********
50	232	8	**********
54	253	9	**********
58	250	9	**********
62	264	9	**********
66	221	8	**********
70	211	7	**********
74	148	5	**********
78	0	0	
82	106	4	**********
86	44	2	*******
90	19	1	***
94	6	0	*
98	2	0	
102	3	0	*
106	0	0	
110	0	0	
114	0	0	
118	0	0	
122	0	0	
126	0	0	
130	0	0	
134	0	0	
138	0	0	
142	0	0	
146	0	0	
150	0	0	
154	0	0	
158	0	0	

NO. OF SAMPLES OVER 160 = 4
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2869
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 09/02/72

MEDIAN (DEG.T)	FREQUNCY NO.	PCT	50 100 150 200 250
5	128	4	**********
15	86	3	*******
25	59	2	*****
35	23	1	**
45	28	1	**
55	17	1	*
65	21	1	**
75	34	1	***
85	23	1	**
95	26	1	**
105	24	1	**
115	62	2	*****
125	98	3	********
135	148	5	************
145	202	7	*****************
155	167	6	**************
165	115	4	*********
175	58	2	*****
185	29	1	**
195	17	1	*
205	11	0	*
215	19	1	*
225	22	1	**
235	20	1	*
245	34	1	***
255	25	1	**
265	36	1	***
275	39	1	***
285	58	2	*****
295	104	4	*********
305	122	4	**********
315	160	6	**************
325	224	8	*******************
335	265	9	**********************
345	226	8	*******************
355	139	5	************
365	0	0	
375	0	0	
385	0	0	
395	0	0	

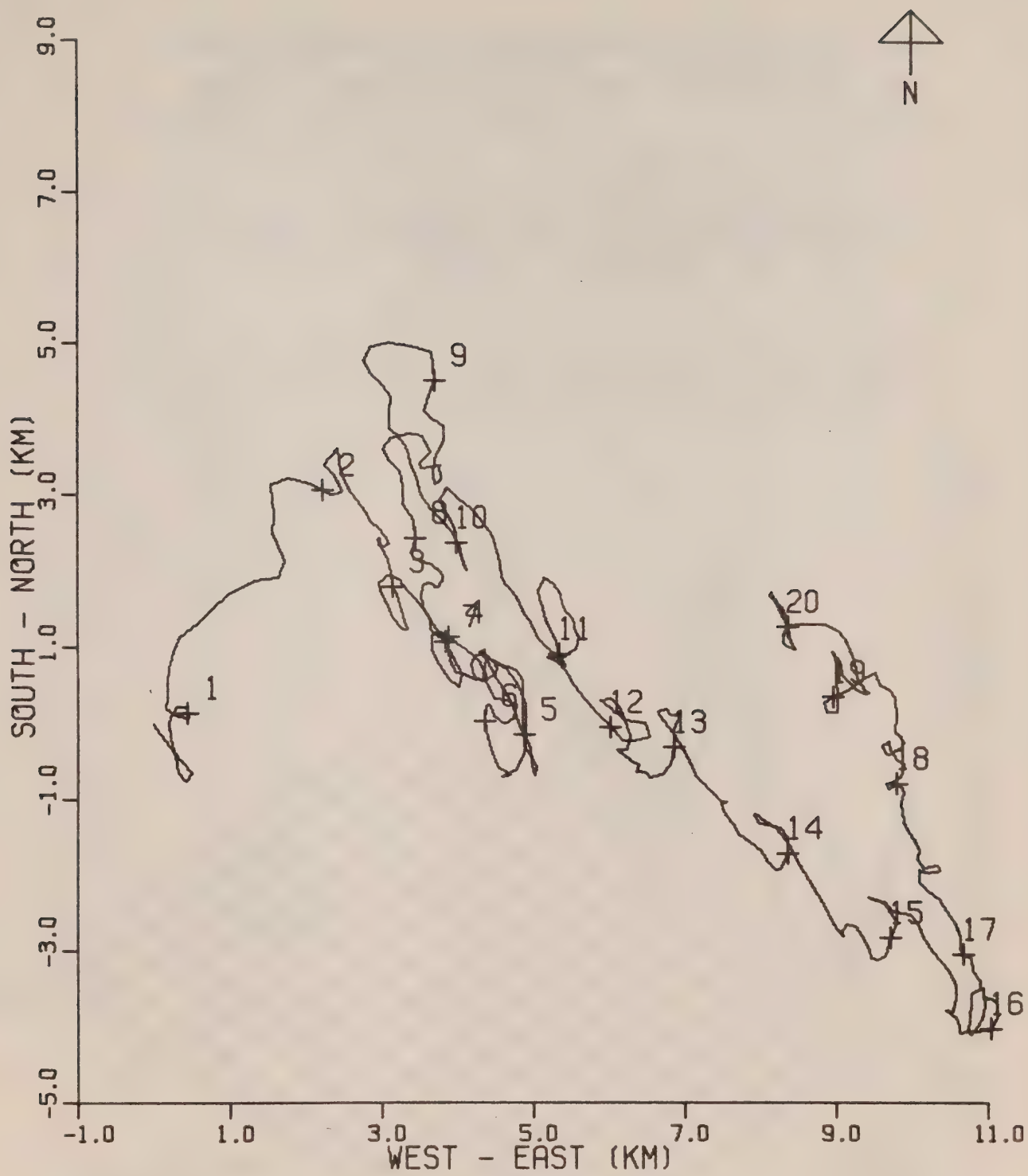
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2869
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 09/02/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 60 120 180 240 300
5.52	0	0	
5.56	17	1	***
5.60	3	0	*
5.64	19	1	***
5.68	15	1	***
5.72	34	1	******
5.76	37	1	******
5.80	22	1	****
5.84	29	1	*****
5.88	91	3	**********
5.92	85	3	**********
5.96	40	1	*******
6.00	76	3	**********
6.04	47	2	********
6.08	46	2	********
6.12	34	1	******
6.16	139	5	**********
6.20	252	9	**********
6.24	118	4	**********
6.28	19	1	***
6.32	54	2	*********
6.36	33	1	******
6.40	94	3	**********
6.44	68	2	**********
6.48	146	5	**********
6.52	103	4	**********
6.56	48	2	********
6.60	154	5	**********
6.64	86	3	**********
6.68	113	4	**********
6.72	119	4	**********
6.76	142	5	**********
6.80	94	3	**********
6.84	246	9	**********
6.88	128	4	**********
6.92	49	2	********
6.96	27	1	*****
7.00	29	1	*****
7.04	7	0	*
7.08	6	0	*

NO. OF SAMPLES OVER 7.10 = 0
NO. OF SAMPLES UNDER 5.50 = 0
TOTAL NO. OF OBSERVATIONS = 2869
SAMPLE INTERVAL = 10 MINUTES



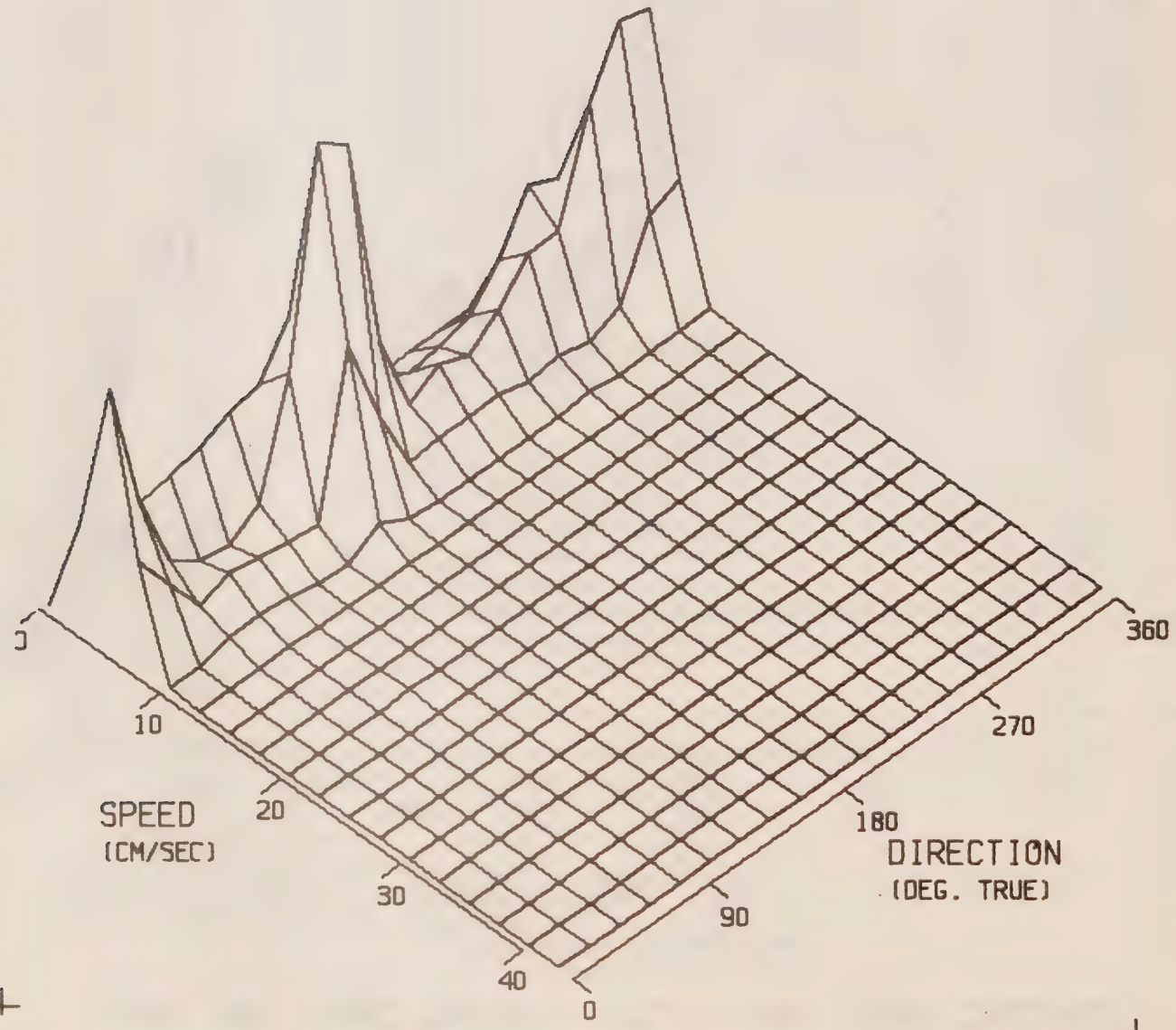
STN. NO. HS4

DEPTH 130 M.

STARTING DATE: 29/ 2/72 ENDING DATE: 20/ 3/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 29/ 2/72
NO. OF SAMPLES = 2905



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE:29/ 2/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	049	136	002										187
15- 29	032	091	003										126
30- 44	039	034	005										78
45- 59	033	017	011										61
60- 74	042	022	008	001									73
75- 89	045	018	008			001							72
90-104	037	025	002										64
105-119	058	045	002										105
120-134	065	117	004										186
135-149	074	244	019										337
150-164	065	209	012										286
165-179	046	100											146
180-194	029	038											67
195-209	021	021	002										44
210-224	010	033											43
225-239	007	030											37
240-254	014	033											47
255-269	019	032	004										55
270-284	025	045	006										76
285-299	050	045	006										101
300-314	053	067											120
315-329	052	104											156
330-344	059	150	001										210
345-359	050	172	005										227
	974		100		0		0		0		0		2904
		1828		1		1		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 1

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 29/02/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 60 120 180 240 300
2	0	0	
6	0	0	
10	0	0	
14	138	5	**********
18	116	4	*********
22	129	4	**********
26	168	6	************
30	176	6	************
34	247	9	*******************
38	256	9	********************
42	243	8	*******************
46	232	8	******************
50	229	8	******************
54	224	8	*****************
58	222	8	*****************
62	185	6	**************
66	116	4	*********
70	73	3	******
74	48	2	****
78	0	0	
82	42	1	***
86	18	1	*
90	14	0	*
94	5	0	*
98	7	0	*
102	7	0	*
106	4	0	*
110	2	0	
114	0	0	
118	1	0	
122	1	0	
126	0	0	
130	0	0	
134	0	0	
138	0	0	
142	0	0	
146	0	0	
150	0	0	
154	0	0	
158	0	0	

NO. OF SAMPLES OVER 160 = 2
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2905
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 29/02/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	155	5	**********
15	77	3	**********
25	87	3	**********
35	52	2	**********
45	44	2	**********
55	47	2	**********
65	49	2	**********
75	46	2	**********
85	46	2	**********
95	44	2	**********
105	60	2	**********
115	71	2	**********
125	99	3	**********
135	172	6	**********
145	260	9	**********
155	204	7	**********
165	138	5	**********
175	74	3	**********
185	56	2	**********
195	26	1	**********
205	31	1	**********
215	28	1	**********
225	29	1	**********
235	22	1	**********
245	31	1	**********
255	31	1	**********
265	38	1	**********
275	52	2	**********
285	63	2	**********
295	68	2	**********
305	74	3	**********
315	91	3	**********
325	115	4	**********
335	144	5	**********
345	153	5	**********
355	128	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

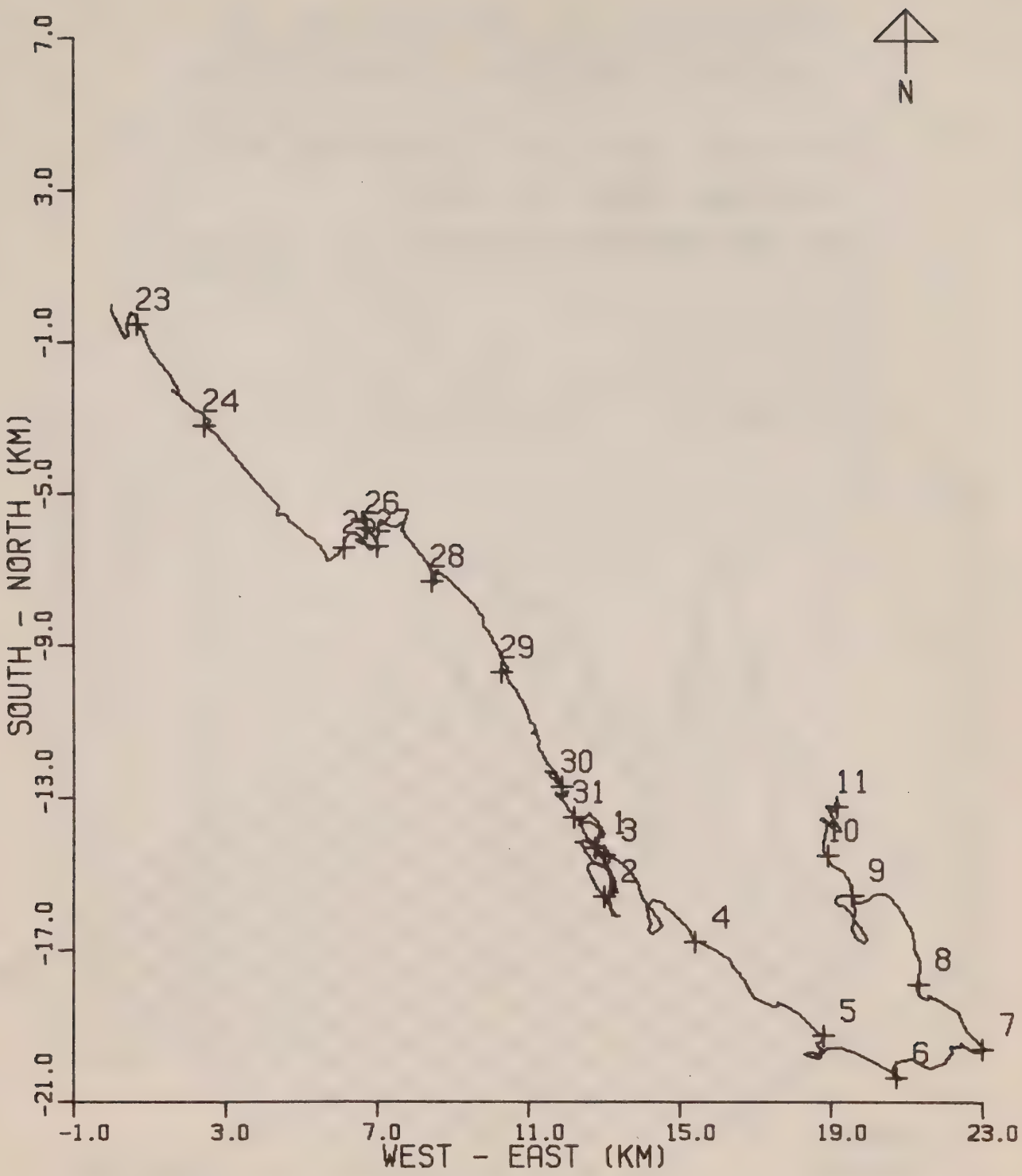
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2905
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 29/02/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	120 240 360 480 600
5.91	7	0	*
5.93	5	0	
5.95	0	0	
5.97	18	1	**
5.99	25	1	**
6.01	8	0	*
6.03	20	1	**
6.05	44	2	****
6.07	80	3	*******
6.09	194	7	******************
6.11	0	0	
6.13	181	6	*****************
6.15	270	9	**************************
6.17	265	9	*************************
6.19	482	17	**
6.21	52	2	****
6.23	47	2	****
6.25	71	2	******
6.27	64	2	*****
6.29	0	0	
6.31	94	3	********
6.33	111	4	**********
6.35	141	5	************
6.37	75	3	******
6.39	153	5	**************
6.41	88	3	*******
6.43	119	4	**********
6.45	0	0	
6.47	80	3	*******
6.49	82	3	*******
6.51	81	3	*******
6.53	17	1	*
6.55	3	0	
6.57	6	0	*
6.59	8	0	*
6.61	5	0	
6.63	0	0	
6.65	6	0	*
6.67	2	0	
6.69	0	0	

NO. OF SAMPLES OVER 6.70 = 0
NO. OF SAMPLES UNDER 5.90 = 1
TOTAL NO. OF OBSERVATIONS = 2905
SAMPLE INTERVAL = 10 MINUTES



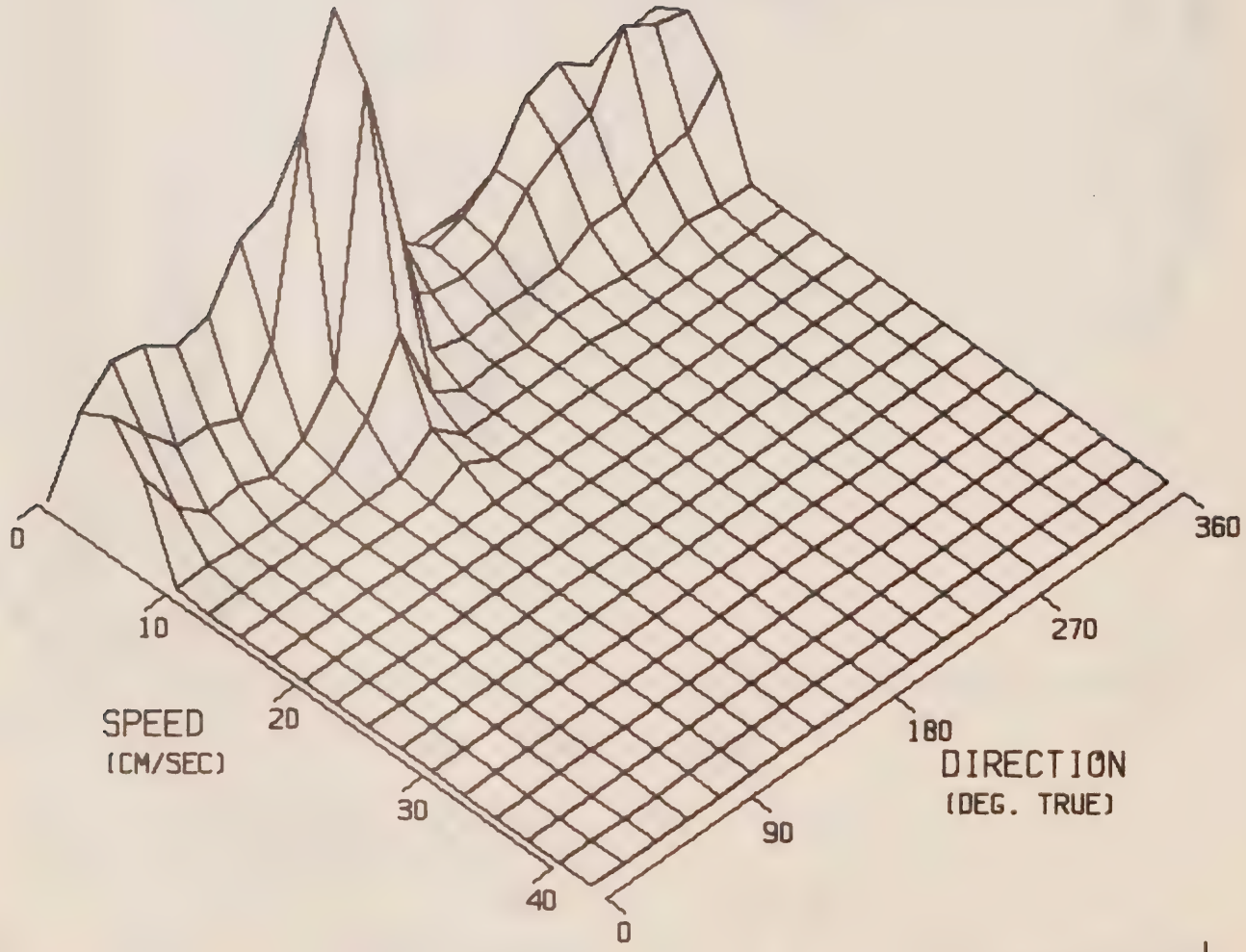
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 22/ 3/72 ENDING DATE: 11/ 4/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 22/ 3/72
NO. OF SAMPLES = 2847



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE:22/ 3/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	045	079	001										125
15- 29	063	044	005										112
30- 44	054	024											78
45- 59	050	039	001										90
60- 74	046	016											62
75- 89	046	019	001										66
90-104	072	032											104
105-119	067	076	021										164
120-134	076	219	023	002									320
135-149	071	226	104	016									417
150-164	054	198	025										277
165-179	036	050	001										87
180-194	023	023	001										47
195-209	026	011	003										40
210-224	016	010	001	001									28
225-239	015	013	007										35
240-254	016	026	003										45
255-269	023	024	002										49
270-284	048	049	002										99
285-299	045	044	003										92
300-314	049	054	001										104
315-329	044	092	008										144
330-344	041	082	006										129
345-359	044	083	006										133
	1070		225		0		0		0		0		2847
		1533		19		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 22/03/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	50 100 150 200 250
2	0	0	
6	0	0	
10	0	0	
14	186	7	**********
18	207	7	**********
22	164	6	********
26	176	6	*********
30	160	6	********
34	177	6	*********
38	179	6	*********
42	190	7	**********
46	203	7	**********
50	182	6	*********
54	193	7	**********
58	165	6	********
62	140	5	*******
66	116	4	******
70	77	3	****
74	88	3	*****
78	0	0	
82	59	2	***
86	39	1	**
90	39	1	**
94	23	1	*
98	21	1	*
102	15	1	*
106	13	0	*
110	4	0	*
114	5	0	*
118	7	0	*
122	2	0	
126	1	0	
130	2	0	
134	5	0	*
138	5	0	*
142	1	0	
146	1	0	
150	1	0	
154	0	0	
158	1	0	

NO. OF SAMPLES OVER 160 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2847
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 22/03/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	60 120 180 240 300
5	91	3	**********
15	81	3	**********
25	69	2	**********
35	55	2	*********
45	54	2	*********
55	59	2	**********
65	40	1	*******
75	47	2	********
85	41	1	*******
95	65	2	**********
105	92	3	**********
115	121	4	**********
125	191	7	**********
135	292	10	**********
145	269	9	**********
155	206	7	**********
165	91	3	**********
175	41	1	*******
185	34	1	******
195	33	1	******
205	21	1	****
215	18	1	***
225	18	1	***
235	24	1	****
245	25	1	****
255	32	1	*****
265	46	2	********
275	68	2	**********
285	56	2	*********
295	69	2	**********
305	66	2	**********
315	78	3	**********
325	97	3	**********
335	99	3	**********
345	66	2	**********
355	92	3	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

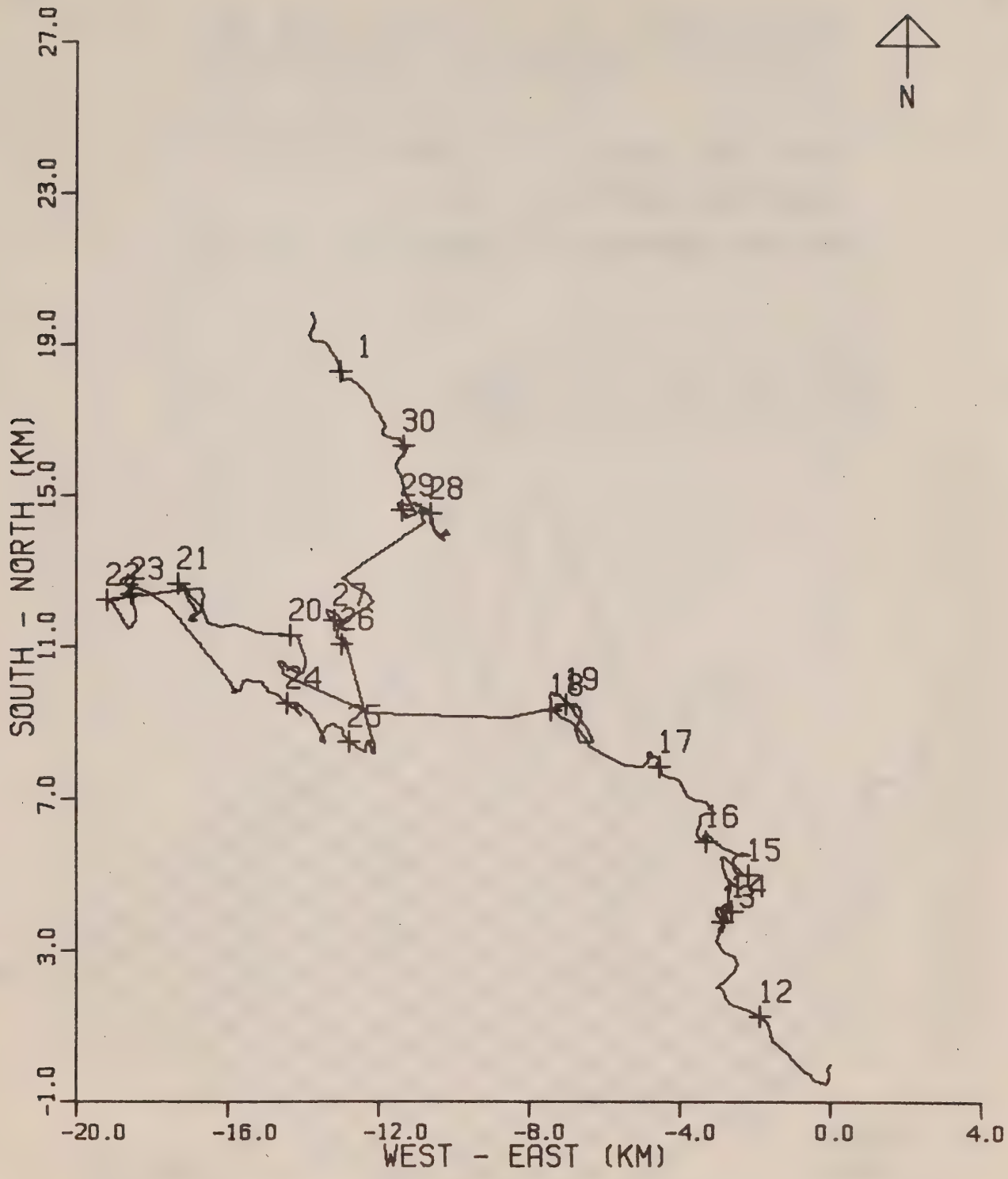
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2847
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 22/03/72

MEDIAN (DEG.C)	FREQINCY NO.	PCT	. 70 . 140 . 210 . 280 . 350 .
5.72	0	0	
5.76	0	0	
5.80	0	0	
5.84	1	0	
5.88	38	1	*****
5.92	140	5	**********
5.96	84	3	**********
6.00	169	6	**********
6.04	102	4	**********
6.08	90	3	**********
6.12	21	1	***
6.16	217	8	**********
6.20	241	8	**********
6.24	231	8	**********
6.28	80	3	**********
6.32	279	10	**********
6.36	216	8	**********
6.40	198	7	**********
6.44	112	4	**********
6.48	146	5	**********
6.52	107	4	**********
6.56	79	3	**********
6.60	224	8	**********
6.64	40	1	******
6.68	10	0	*
6.72	6	0	*
6.76	12	0	**
6.80	4	0	*
6.84	0	0	
6.88	0	0	
6.92	0	0	
6.96	0	0	
7.00	0	0	
7.04	0	0	
7.08	0	0	
7.12	0	0	
7.16	0	0	
7.20	0	0	
7.24	0	0	
7.28	0	0	

NO. OF SAMPLES OVER 7.30 = 0
NO. OF SAMPLES UNDER 5.70 = 0
TOTAL NO. OF OBSERVATIONS = 2847
SAMPLE INTERVAL = 10 MINUTES



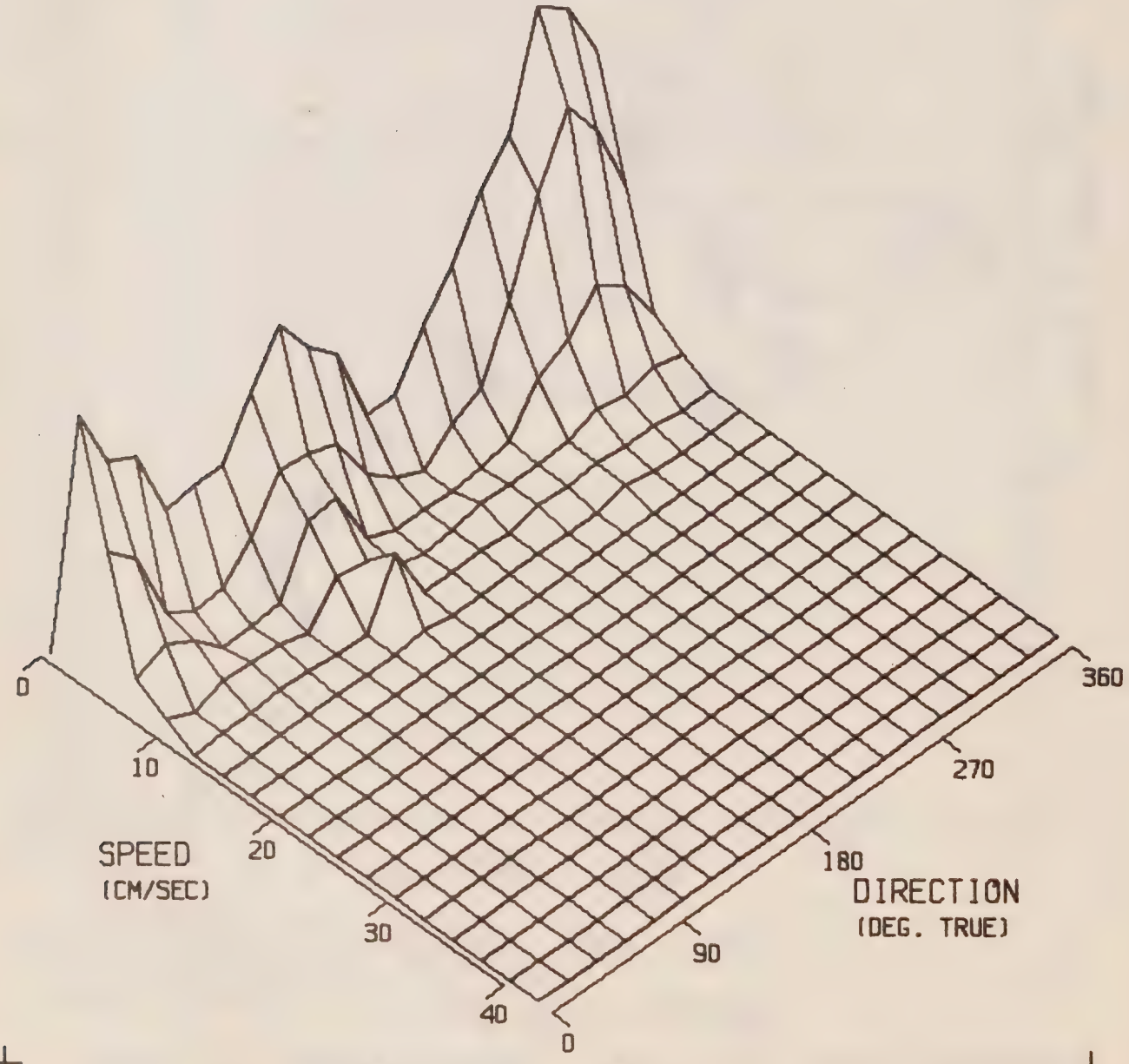
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 11/ 4/72 ENDING DATE: 1/ 5/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 11/ 4/72
NO. OF SAMPLES = 2913



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE:11/ 4/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	081	075	002										158
15- 29	078	057	006										141
30- 44	053	025	006										84
45- 59	064	013	015										92
60- 74	039	012		004									55
75- 89	045	011	008										64
90-104	038	019	002										59
105-119	054	032	012										98
120-134	068	076	034	001									179
135-149	073	048	033	020									174
150-164	073	051	009										133
165-179	057	017											74
180-194	037	013	002										52
195-209	022	005	005										32
210-224	024	002	004										30
225-239	030	005	005	002									42
240-254	047	016	002	001									66
255-269	050	020	006	002									78
270-284	072	046	009	005									132
285-299	088	090	021	005									204
300-314	106	095	014	001									216
315-329	129	143	010										282
330-344	125	114	016										255
345-359	111	073	017										201
	1564		238		0		0		0		0		2901
		1058		41		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 12

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 11/04/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70 140 210 280 350
2	0	0	
6	0	0	
10	0	0	
14	440	15	**********
18	288	10	**********
22	232	8	**********
26	208	7	**********
30	207	7	**********
34	189	6	**********
38	180	6	**********
42	155	5	**********
46	158	5	**********
50	152	5	**********
54	91	3	**********
58	83	3	**********
62	75	3	**********
66	61	2	**********
70	55	2	**********
74	48	2	**********
78	0	0	
82	43	1	**********
86	48	2	**********
90	30	1	**********
94	33	1	**********
98	21	1	**********
102	16	1	**********
106	11	0	**********
110	10	0	**********
114	13	0	**********
118	13	0	**********
122	12	0	**********
126	13	0	**********
130	6	0	**********
134	3	0	
138	3	0	
142	3	0	
146	1	0	
150	0	0	
154	0	0	
158	0	0	

NO. OF SAMPLES OVER 160 = 12
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2913
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 11/04/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	118	4	**********
15	98	3	*********
25	87	3	********
35	58	2	*****
45	78	3	*******
55	41	1	****
65	38	1	****
75	44	2	****
85	35	1	***
95	42	1	****
105	49	2	*****
115	71	2	*******
125	118	4	**********
135	123	4	**********
145	122	4	**********
155	90	3	********
165	52	2	*****
175	53	2	*****
185	40	1	****
195	23	1	**
205	20	1	**
215	18	1	**
225	18	1	**
235	38	1	****
245	39	1	****
255	50	2	*****
265	62	2	******
275	91	3	*********
285	112	4	**********
295	141	5	************
305	130	4	**********
315	188	6	**********
325	183	6	**********
335	172	6	**********
345	158	5	**********
355	113	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

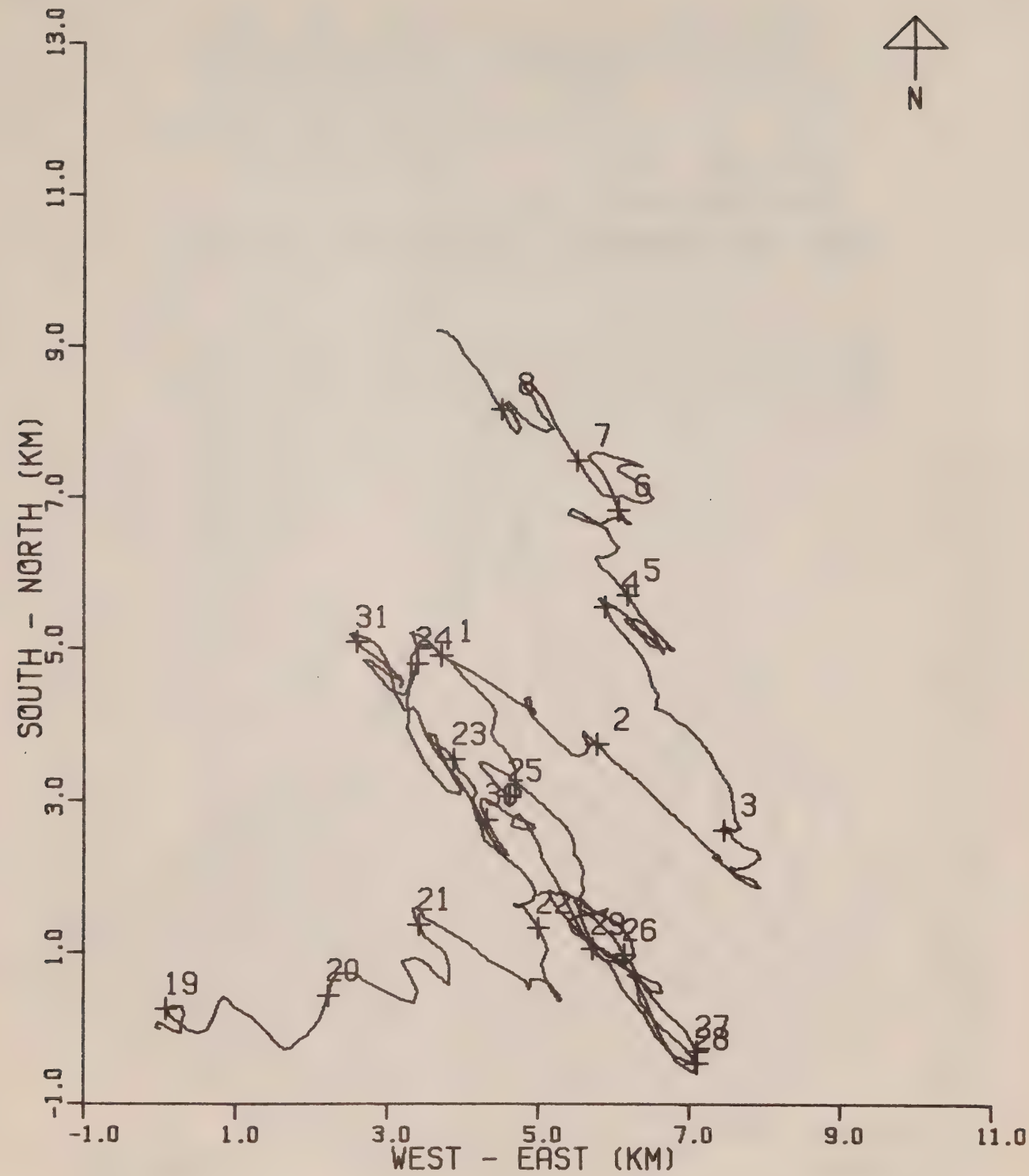
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2913
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 11/04/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	100 200 300 400 500
5.91	0	0	
5.93	0	0	
5.95	0	0	
5.97	64	2	******
5.99	377	13	**********
6.01	524	18	**********
6.03	303	10	**********
6.05	423	15	**********
6.07	205	7	**********
6.09	96	3	**********
6.11	0	0	
6.13	46	2	*****
6.15	57	2	******
6.17	54	2	*****
6.19	35	1	****
6.21	48	2	*****
6.23	66	2	*******
6.25	64	2	******
6.27	45	2	*****
6.29	0	0	
6.31	86	3	**********
6.33	92	3	**********
6.35	61	2	******
6.37	23	1	**
6.39	40	1	****
6.41	29	1	***
6.43	23	1	**
6.45	0	0	
6.47	7	0	*
6.49	9	0	*
6.51	9	0	*
6.53	51	2	*****
6.55	27	1	***
6.57	36	1	****
6.59	13	0	*
6.61	0	0	
6.63	0	0	
6.65	0	0	
6.67	0	0	
6.69	0	0	

NO. OF SAMPLES OVER 6.70 = 0
NO. OF SAMPLES UNDER 5.90 = 0
TOTAL NO. OF OBSERVATIONS = 2913
SAMPLE INTERVAL = 10 MINUTES



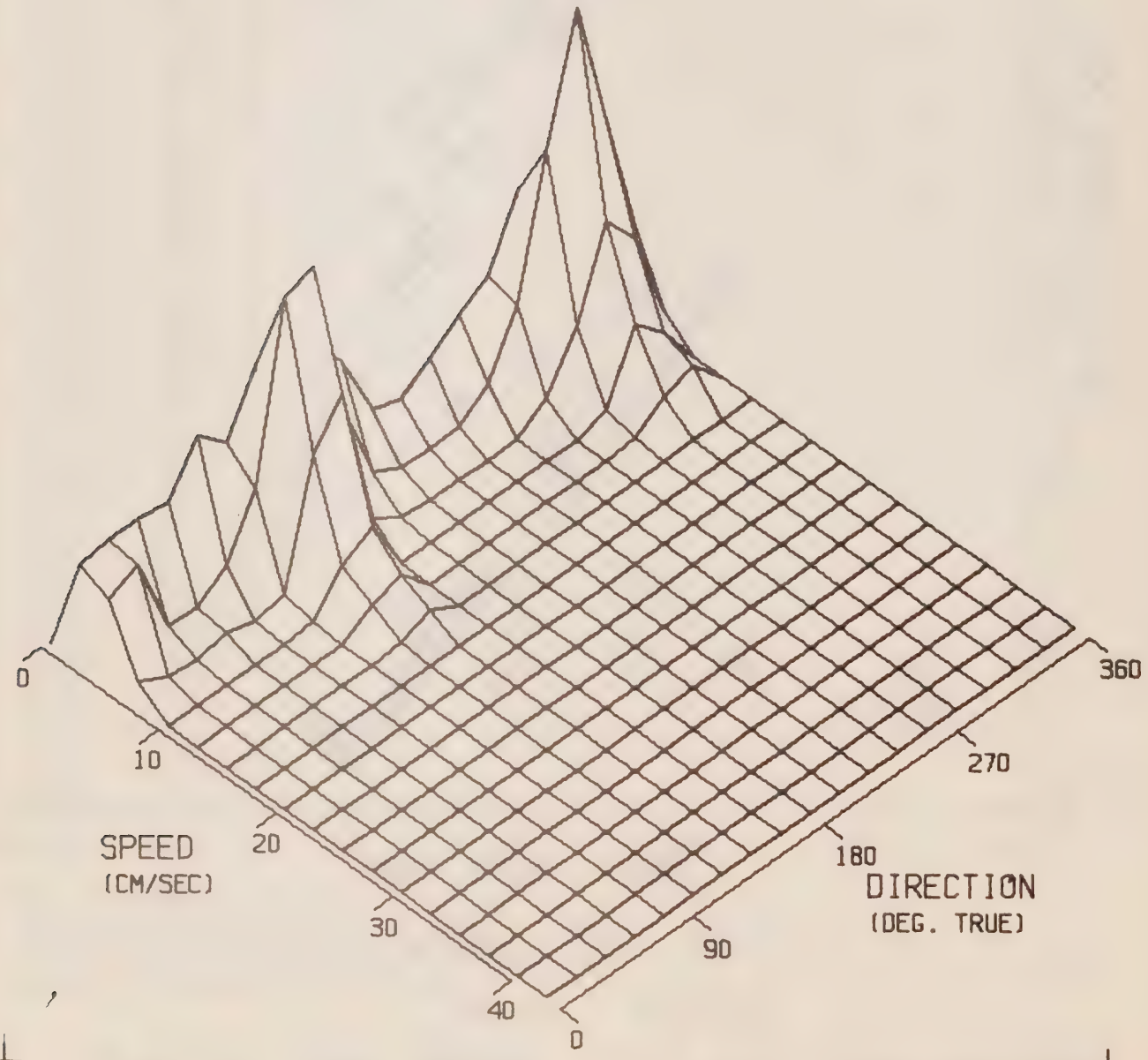
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 18/ 7/72 ENDING DATE: 8/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 18/ 7/72
NO. OF SAMPLES = 2983



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE:18/ 7/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	039	045											84
15- 29	050	048											98
30- 44	050	013											63
45- 59	039	009											48
60- 74	042	016											58
75- 89	067	017											84
90-104	047	033	001										81
105-119	074	097	022										193
120-134	073	204	050	019									346
135-149	071	153	043	004									271
150-164	059	072	001										132
165-179	075	026											101
180-194	034	013											47
195-209	021	006											27
210-224	020	004											24
225-239	012	007											19
240-254	039	005											44
255-269	031	020											51
270-284	040	031											71
285-299	059	097	002										158
300-314	078	138	016	001									233
315-329	070	212	064	006					001				353
330-344	063	150	062	007									282
345-359	051	064											115
	1204		261		0		0		1		0		2983
		1480		37		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 18/07/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	70 . 140 . 210 . 280 . 350 .
2	0	0	
6	0	0	
10	0	0	
14	191	6	**********
18	209	7	**********
22	174	6	*********
26	180	6	*********
30	205	7	**********
34	245	8	************
38	212	7	**********
42	226	8	**********
46	191	6	**********
50	181	6	*********
54	171	6	*********
58	157	5	********
62	118	4	*******
66	100	3	******
70	67	2	****
74	57	2	***
78	0	0	
82	49	2	***
86	45	2	***
90	21	1	*
94	28	1	*
98	25	1	*
102	19	1	*
106	19	1	*
110	18	1	*
114	20	1	*
118	17	1	*
122	9	0	*
126	7	0	*
130	5	0	*
134	4	0	*
138	6	0	*
142	4	0	*
146	2	0	
150	0	0	
154	0	0	
158	0	0	

NO. OF SAMPLES OVER 160 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2983
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 18/07/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	50 100 150 200 250
5	62	2	**********
15	53	2	**********
25	69	2	**********
35	42	1	********
45	32	1	******
55	38	1	********
65	37	1	*******
75	51	2	**********
85	57	2	**********
95	41	1	********
105	89	3	**********
115	163	5	**********
125	196	7	**********
135	256	9	**********
145	151	5	**********
155	91	3	**********
165	80	3	**********
175	60	2	**********
185	27	1	*****
195	22	1	****
205	16	1	***
215	20	1	****
225	11	0	**
235	13	0	***
245	29	1	******
255	39	1	********
265	29	1	******
275	48	2	**********
285	75	3	**********
295	117	4	**********
305	152	5	**********
315	186	6	**********
325	256	9	**********
335	211	7	**********
345	105	4	**********
355	59	2	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

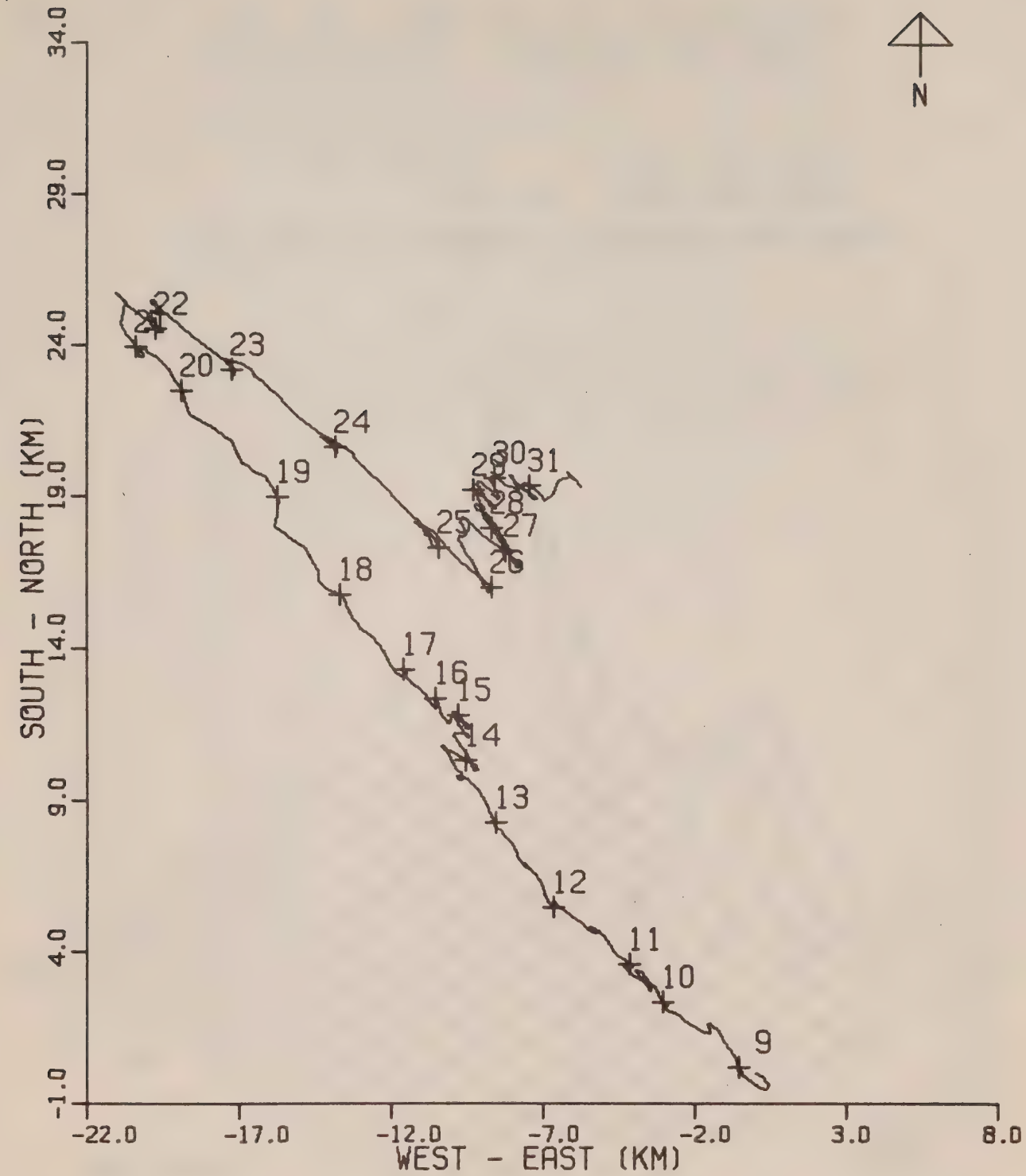
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2983
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 18/07/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 120 . 240 . 360 . 480 . 600 .
7.61	0	0	
7.63	0	0	
7.65	8	0	*
7.67	115	4	**********
7.69	0	0	
7.71	102	3	*********
7.73	0	0	
7.75	261	9	************************
7.77	404	14	*************************************
7.79	0	0	
7.81	398	13	************************************
7.83	0	0	
7.85	602	20	**
7.87	394	13	************************************
7.89	0	0	
7.91	161	5	**************
7.93	0	0	
7.95	74	2	******
7.97	118	4	**********
7.99	0	0	
8.01	91	3	********
8.03	29	1	**
8.05	0	0	
8.07	7	0	*
8.09	0	0	
8.11	14	0	*
8.13	18	1	**
8.15	0	0	
8.17	19	1	**
8.19	0	0	
8.21	21	1	**
8.23	35	1	***
8.25	0	0	
8.27	55	2	*****
8.29	0	0	
8.31	27	1	**
8.33	6	0	*
8.35	0	0	
8.37	12	0	*
8.39	12	0	*

NO. OF SAMPLES OVER 8.40 = 0
NO. OF SAMPLES UNDER 7.60 = 0
TOTAL NO. OF OBSERVATIONS = 2983
SAMPLE INTERVAL = 10 MINUTES



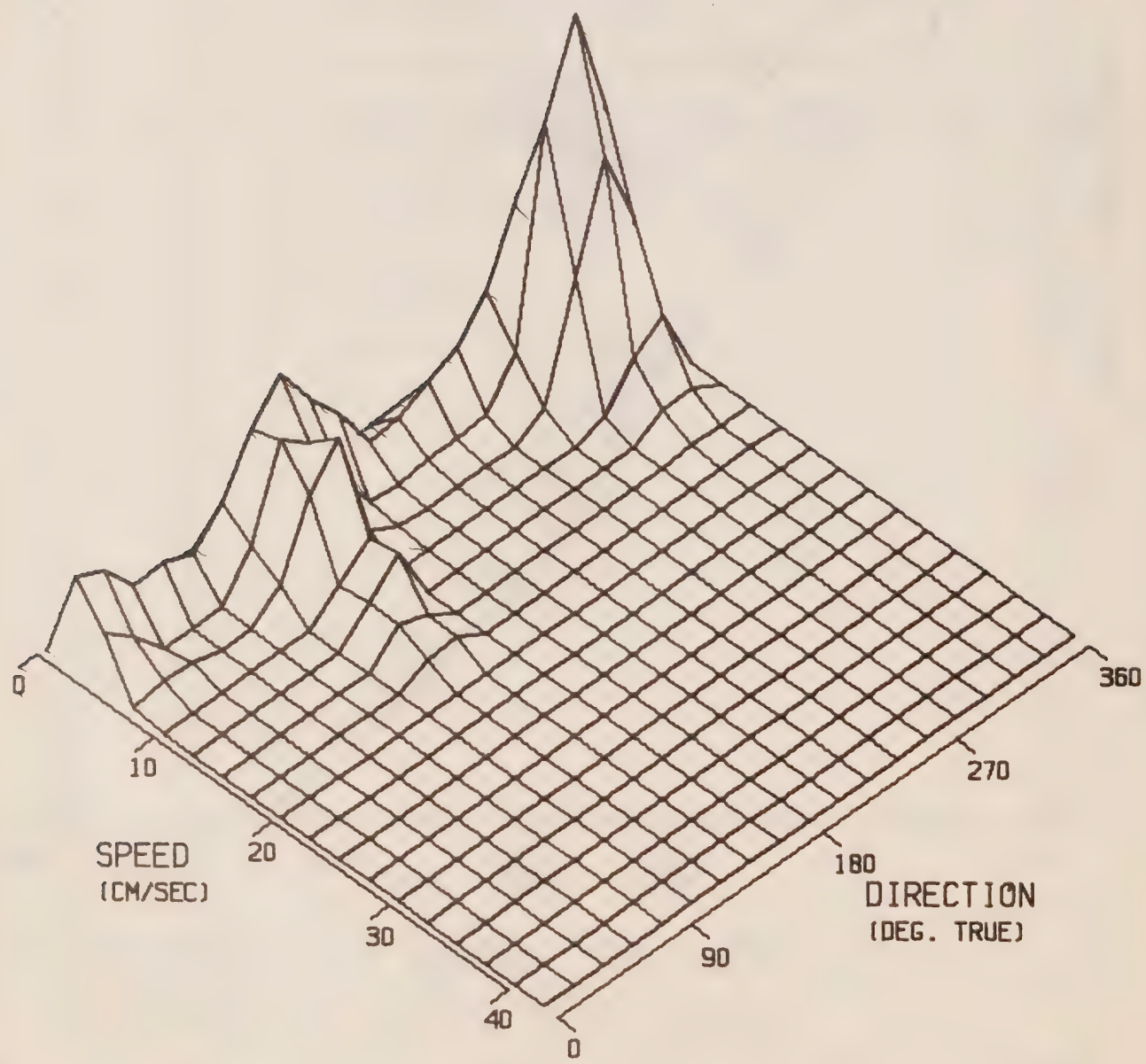
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 8/ 8/72 ENDING DATE: 31/ 8/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 8/ 8/72
NO. OF SAMPLES = 3362



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE: 8/ 8/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	056	037	001										94
15- 29	047	027	001										75
30- 44	029	005	006										40
45- 59	026	002	001										29
60- 74	030	002	002										34
75- 89	022	004	001										27
90-104	037	036	003										76
105-119	051	080	015										146
120-134	096	147	069	068	023								403
135-149	090	111	051	023	002								277
150-164	054	045	003										102
165-179	068	017	003										88
180-194	031	002											33
195-209	014	001											15
210-224	017	007											24
225-239	022	003											25
240-254	023	006											29
255-269	040	008											48
270-284	049	022											71
285-299	080	128	003										211
300-314	118	288	023										429
315-329	108	319	068	009									504
330-344	091	263	096	006	001								457
345-359	060	061	003	001									125
	1259		349		26		0		0		0		3362
		1621		107		0		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 08/08/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	80 160 240 320 400
3	0	0	
9	0	0	
15	304	9	**********
21	376	11	**********
27	180	5	**********
33	399	12	**********
39	212	6	**********
45	360	11	**********
51	185	6	**********
57	346	10	**********
63	160	5	**********
69	247	7	**********
75	111	3	**********
81	81	2	**********
87	108	3	**********
93	36	1	*****
99	52	2	*******
105	21	1	***
111	35	1	****
117	16	0	**
123	41	1	*****
129	15	0	**
135	19	1	**
141	9	0	*
147	10	0	*
153	6	0	*
159	7	0	*
165	16	0	**
171	3	0	
177	4	0	*
183	1	0	
189	2	0	
195	0	0	
201	0	0	
207	0	0	
213	0	0	
219	0	0	
225	0	0	
231	0	0	
237	0	0	

NO. OF SAMPLES OVER 240 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3362
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 08/08/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	70 140 210 280 350
5	69	2	**********
15	56	2	********
25	49	1	*******
35	27	1	****
45	21	1	***
55	16	0	**
65	27	1	****
75	12	0	**
85	25	1	****
95	46	1	*******
105	66	2	*********
115	116	3	******************
125	242	7	************************************
135	328	10	**
145	106	3	*****************
155	67	2	**********
165	78	2	**********
175	42	1	******
185	26	1	****
195	12	0	**
205	10	0	*
215	16	0	**
225	14	0	**
235	22	1	***
245	20	1	***
255	21	1	***
265	34	1	*****
275	45	1	******
285	86	3	************
295	174	5	**************************
305	273	8	**
315	327	10	**
325	340	10	**
335	349	10	**
345	139	4	*********************
355	61	2	*********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

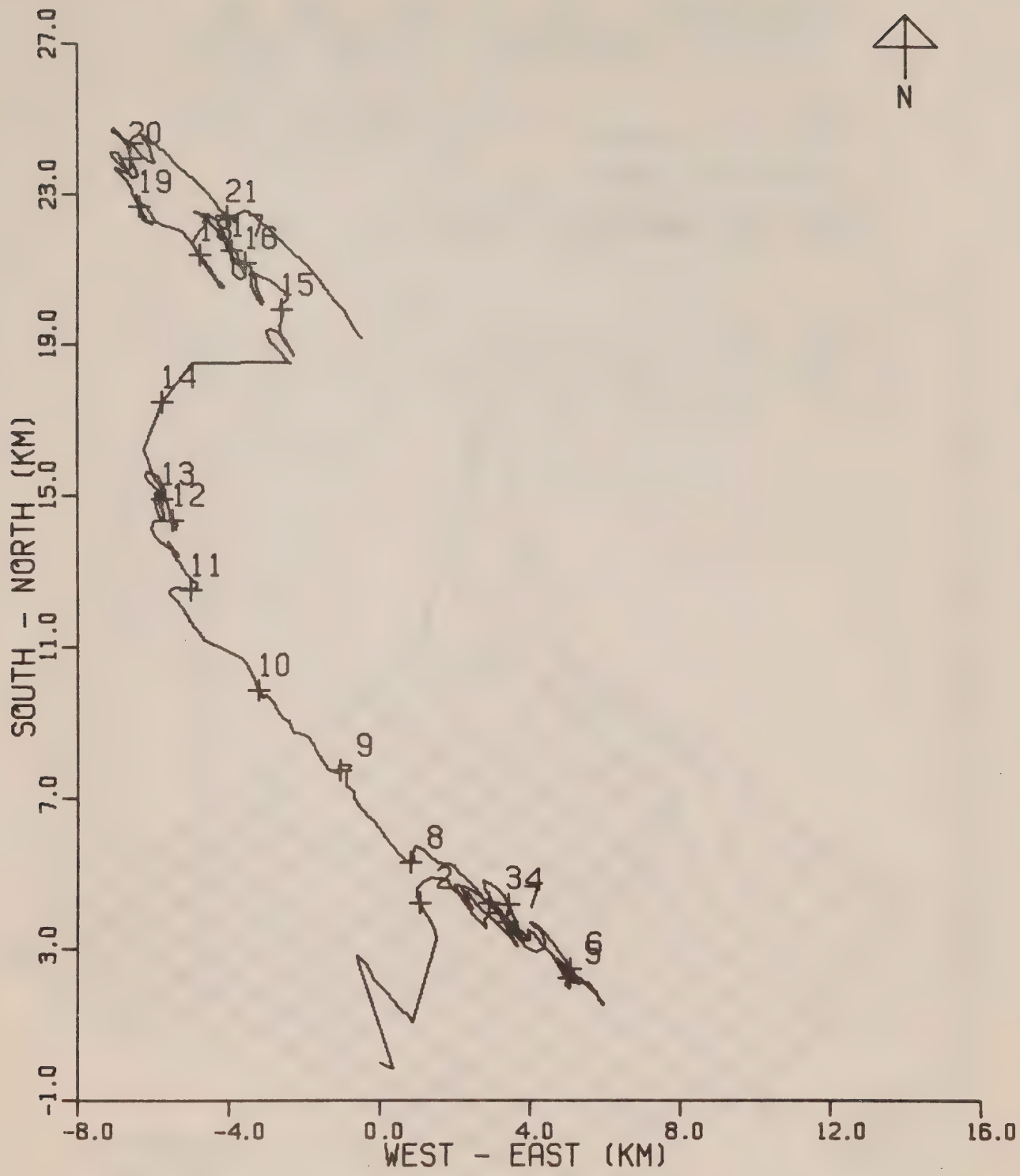
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 3362
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 08/08/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 140 . 280 . 420 . 560 . 700 .
7.71	0	0	
7.73	0	0	
7.75	0	0	
7.77	0	0	
7.79	0	0	
7.81	13	0	*
7.83	0	0	
7.85	401	12	**********
7.87	480	14	**********
7.89	0	0	
7.91	391	12	**********
7.93	0	0	
7.95	134	4	**********
7.97	447	13	**********
7.99	0	0	
8.01	426	13	**********
8.03	181	5	**********
8.05	0	0	
8.07	123	4	**********
8.09	0	0	
8.11	128	4	**********
8.13	84	2	******
8.15	0	0	
8.17	77	2	******
8.19	0	0	
8.21	33	1	**
8.23	26	1	**
8.25	0	0	
8.27	67	2	*****
8.29	0	0	
8.31	78	2	******
8.33	143	4	**********
8.35	0	0	
8.37	75	2	*****
8.39	31	1	**
8.41	0	0	
8.43	15	0	*
8.45	0	0	
8.47	6	0	
8.49	3	0	

NO. OF SAMPLES OVER 8.50 = 0
NO. OF SAMPLES UNDER 7.70 = 0
TOTAL NO. OF OBSERVATIONS = 3362
SAMPLE INTERVAL = 10 MINUTES



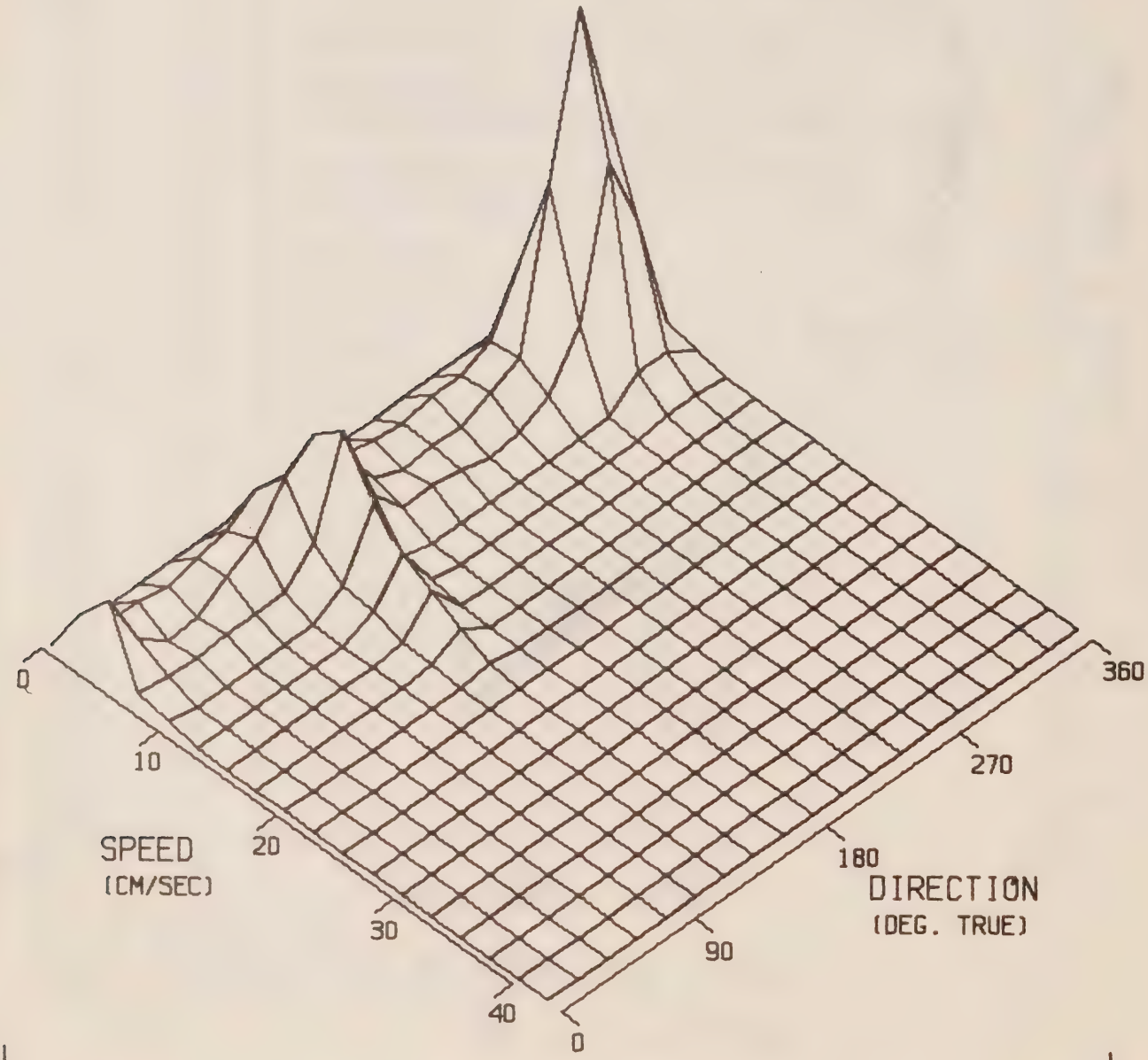
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 1/ 9/72 ENDING DATE: 21/ 9/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 1/ 9/72
NO. OF SAMPLES = 2922



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE: 1/ 9/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE) AND SPEED (MM/SEC).

	SPEED											
DIR	000 TO 039	040 TO 079	080 TO 119	120 TO 159	160 TO 199	200 TO 239	240 TO 279	280 TO 319	320 TO 359	360 TO 399	400 TO 439	440 TO 479	
0- 14	031	053	003										87
15- 29	017	019	002										38
30- 44	013	011											24
45- 59	019	011	001										31
60- 74	010	016	001										27
75- 89	017	026	002										45
90-104	025	037	001										63
105-119	029	050	004										83
120-134	035	101	060	029	014	001							240
135-149	028	141	099	038	009	001							316
150-164	053	083	016	006									158
165-179	019	040	002	001									62
180-194	016	018											34
195-209	014	015											29
210-224	012	025											37
225-239	016	009											25
240-254	010	010	001										21
255-269	018	022											40
270-284	023	034	001										58
285-299	038	096	016										150
300-314	076	223	012										311
315-329	063	343	071										477
330-344	087	258	056								001		402
345-359	042	101	011			001							155
	711		359		23		0		0		1		2913
		1742		74		3		0		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 9

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 01/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	. 80 160 240 320 400 .
3	0	0	
9	0	0	
15	104	4	**********
21	168	6	**********
27	130	4	**********
33	303	10	**********
39	177	6	**********
45	404	14	**********
51	203	7	**********
57	414	14	**********
63	164	6	**********
69	290	10	**********
75	82	3	**********
81	91	3	**********
87	126	4	**********
93	25	1	***
99	55	2	*******
105	12	0	**
111	35	1	****
117	13	0	**
123	21	1	***
129	9	0	*
135	15	1	**
141	11	0	*
147	11	0	*
153	4	0	*
159	3	0	
165	12	0	**
171	2	0	
177	3	0	
183	1	0	
189	3	0	
195	2	0	
201	0	0	
207	1	0	
213	0	0	
219	1	0	
225	0	0	
231	0	0	
237	0	0	

NO. OF SAMPLES OVER 240 = 6
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2901
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 01/09/72

MEDIAN (DEG.T)	FREQUENCY NO.	PCT	70	140	210	280	350
5	70	2	**********				
15	34	1	*****				
25	25	1	****				
35	19	1	***				
45	17	1	**				
55	20	1	***				
65	15	1	**				
75	20	1	***				
85	42	1	******				
95	44	2	******				
105	39	1	******				
115	73	2	**********				
125	130	4	**********				
135	243	8	**********				
145	181	6	**********				
155	103	4	**********				
165	68	2	**********				
175	39	1	******				
185	22	1	***				
195	22	1	***				
205	21	1	***				
215	25	1	****				
225	14	0	**				
235	19	1	***				
245	16	1	**				
255	20	1	***				
265	30	1	****				
275	35	1	*****				
285	56	2	********				
295	127	4	**********				
305	195	7	**********				
315	268	9	**********				
325	346	12	**********				
335	277	9	**********				
345	174	6	**********				
355	73	2	**********				
365	0	0					
375	0	0					
385	0	0					
395	0	0					

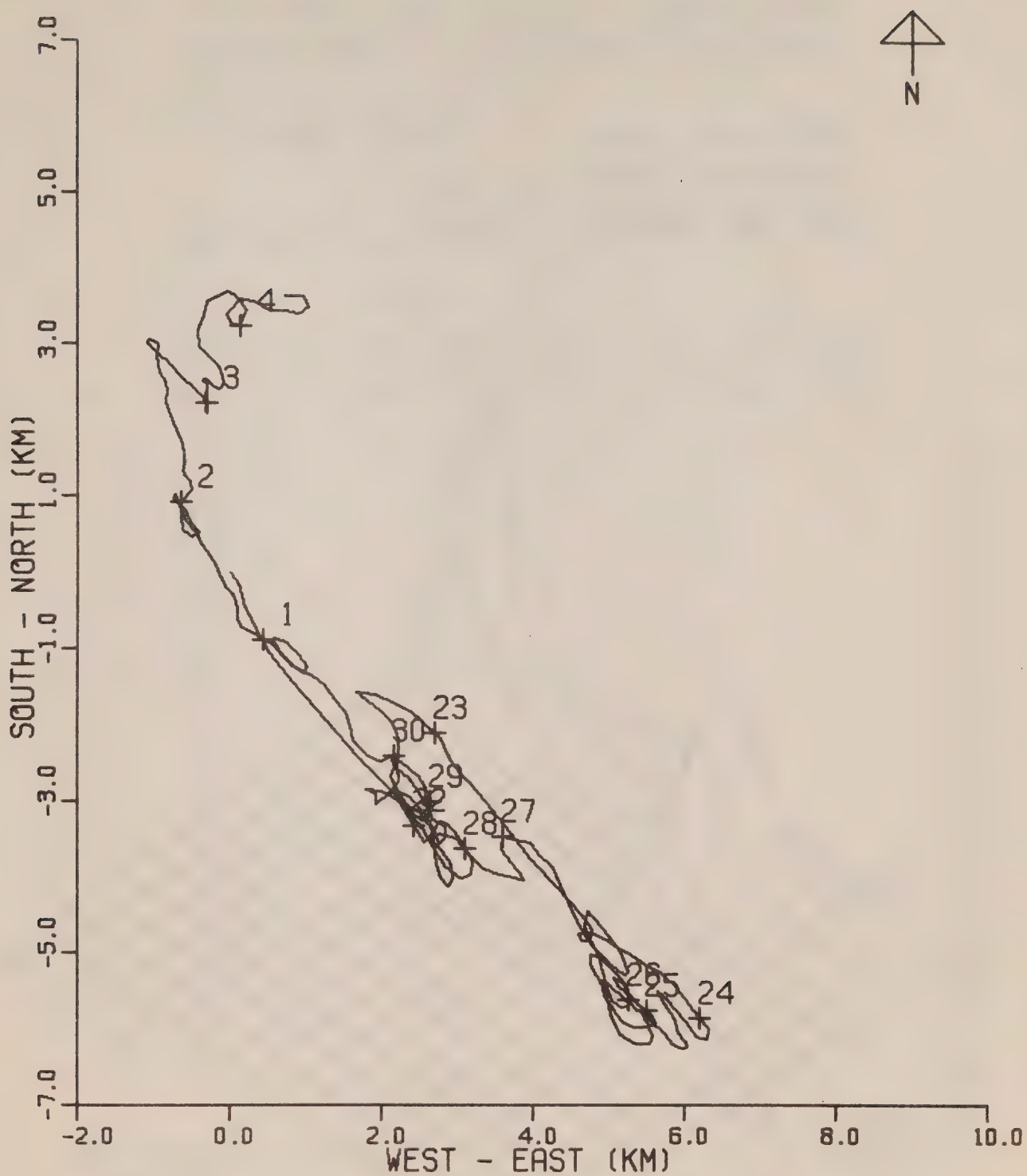
NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 2922
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 01/09/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	100 200 300 400 500
6.62	0	0	
6.66	0	0	
6.70	0	0	
6.74	0	0	
6.78	0	0	
6.82	0	0	
6.86	0	0	
6.90	129	4	**********
6.94	299	10	**********
6.98	482	16	**********
7.02	210	7	**********
7.06	235	8	**********
7.10	68	2	*******
7.14	121	4	**********
7.18	102	3	**********
7.22	156	5	**********
7.26	92	3	**********
7.30	136	5	**********
7.34	92	3	**********
7.38	116	4	**********
7.42	95	3	**********
7.46	41	1	****
7.50	99	3	**********
7.54	114	4	**********
7.58	74	3	*******
7.62	28	1	***
7.66	36	1	****
7.70	50	2	*****
7.74	53	2	*****
7.78	19	1	**
7.82	26	1	***
7.86	18	1	**
7.90	8	0	*
7.94	6	0	*
7.98	2	0	
8.02	1	0	
8.06	0	0	
8.10	0	0	
8.14	0	0	
8.18	0	0	

NO. OF SAMPLES OVER 8.20 = 14
NO. OF SAMPLES UNDER 6.60 = 0
TOTAL NO. OF OBSERVATIONS = 2922
SAMPLE INTERVAL = 10 MINUTES



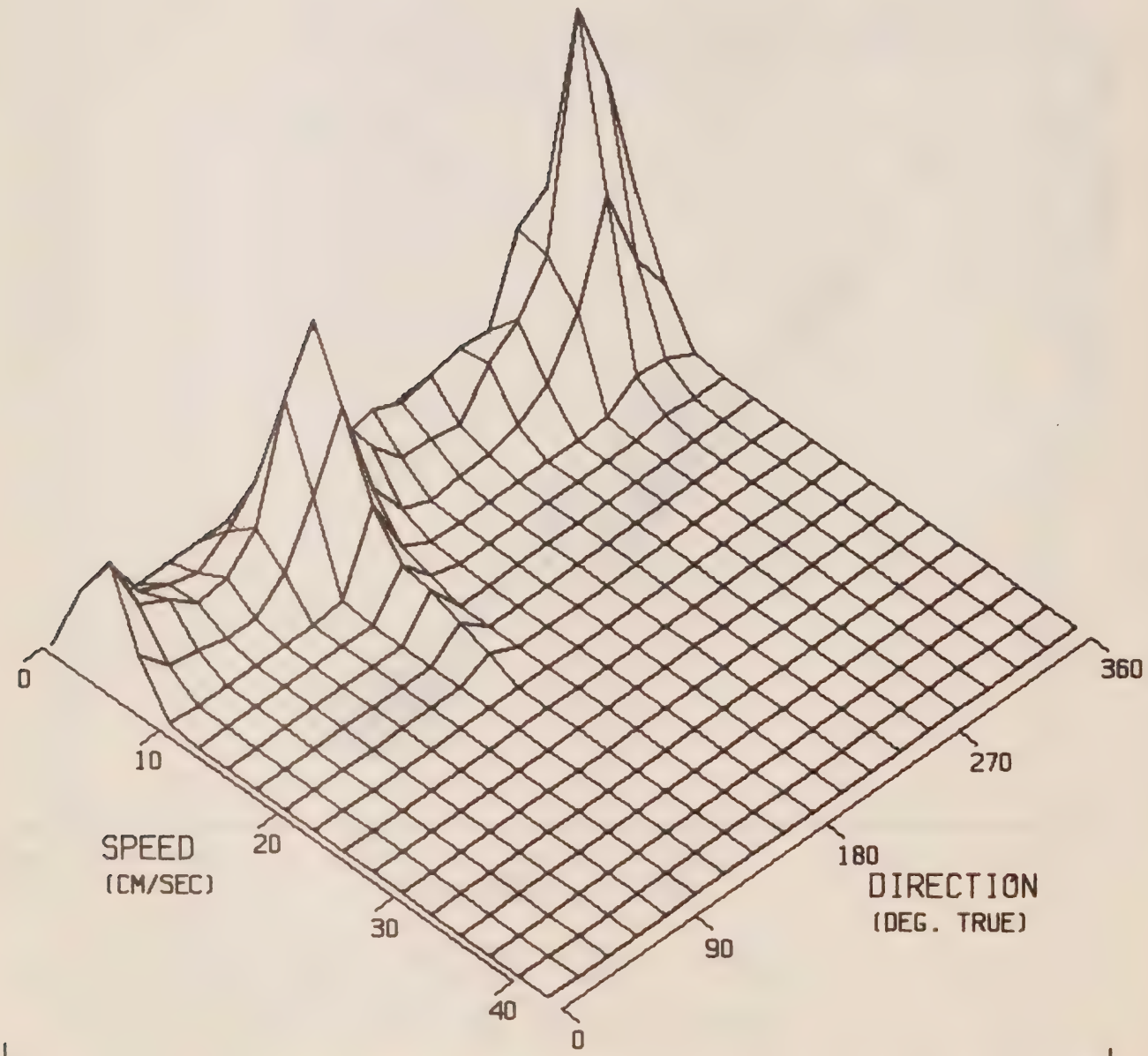
STN. NO. HS-4

DEPTH 130 M.

STARTING DATE: 21/ 9/72 ENDING DATE: 4/10/72

FREQUENCY DISTRIBUTION OF CURRENT SPEED & DIRECTION

STN. NO. HS-4 DEPTH 130 M.
STARTING DATE: 21/ 9/72
NO. OF SAMPLES = 1842



STN. NO. HS-4 DEPTH 130 M.

STARTING DATE:21/ 9/72
SAMPLE INTERVAL = 10 MIN.

FREQUENCY DISTRIBUTION OF DIRECTION (DEG. TRUE)
AND SPEED (MM/SEC).

	SPEED												
	000 TO	040 TO	080 TO	120 TO	160 TO	200 TO	240 TO	280 TO	320 TO	360 TO	400 TO	440 TO	
DIR	039	079	119	159	199	239	279	319	359	399	439	479	
0- 14	031	039											70
15- 29	023	028											51
30- 44	009	021											30
45- 59	012	017	001										30
60- 74	005	006											11
75- 89	003	012											15
90-104	006	020	001										27
105-119	016	051	002										69
120-134	029	109	005		002								145
135-149	041	126	051	023	013	002							256
150-164	018	058	014	003									93
165-179	012	028	003										43
180-194	015	019											34
195-209	018	009											27
210-224	012	011											23
225-239	014	007	001					001					23
240-254	014	008	001										23
255-269	018	022	001										41
270-284	015	030											45
285-299	024	054	007										85
300-314	058	083	010										151
315-329	049	186	017										252
330-344	036	123	020										179
345-359	030	080	009										119
	508		143		15		0		0		0		1842
		1147		26		2		1		0		0	

NO. OF SPEEDS EXCEEDING 480 MM/SEC = 0

HISTOGRAM OF SPEED

HOWE SOUND HS-4 DEPTH 130M START DATE 21/09/72

MEDIAN (MM/S)	FREQUENCY NO.	PCT	60 120 180 240 300
3	0	0	
9	0	0	
15	45	2	********
21	121	7	**********
27	89	5	**********
33	253	14	**********
39	141	8	**********
45	271	15	**********
51	131	7	**********
57	270	15	**********
63	124	7	**********
69	148	8	**********
75	62	3	**********
81	33	2	******
87	48	3	********
93	17	1	***
99	24	1	****
105	5	0	*
111	11	1	**
117	5	0	*
123	5	0	*
129	3	0	*
135	5	0	*
141	4	0	*
147	7	0	*
153	1	0	
159	1	0	
165	1	0	
171	0	0	
177	6	0	*
183	1	0	
189	4	0	*
195	2	0	
201	2	0	
207	0	0	
213	1	0	
219	0	0	
225	0	0	
231	0	0	
237	0	0	

NO. OF SAMPLES OVER 240 = 1
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1842
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF DIRECTION

HOWE SOUND HS-4 DEPTH 130M START DATE 21/09/72

MEDIAN (DEG.T)	FREQ NO.	FREQ PCT	50 100 150 200 250
5	49	3	**********
15	48	3	**********
25	26	1	*****
35	21	1	****
45	22	1	****
55	15	1	***
65	7	0	*
75	12	1	**
85	8	0	**
95	17	1	***
105	36	2	*******
115	47	3	*********
125	97	5	**********
135	171	9	**********
145	137	7	**********
155	59	3	**********
165	44	2	*********
175	26	1	*****
185	24	1	*****
195	14	1	***
205	21	1	****
215	13	1	***
225	17	1	***
235	18	1	****
245	12	1	**
255	23	1	*****
265	32	2	******
275	30	2	******
285	42	2	********
295	60	3	**********
305	93	5	**********
315	138	7	**********
325	180	10	**********
335	120	7	**********
345	97	5	**********
355	66	4	**********
365	0	0	
375	0	0	
385	0	0	
395	0	0	

NO. OF SAMPLES OVER 400 = 0
NO. OF SAMPLES UNDER 0 = 0
TOTAL NO. OF OBSERVATIONS = 1842
SAMPLE INTERVAL = 10 MINUTES

HISTOGRAM OF TEMPERATURE

HOWE SOUND HS-4 DEPTH 130M START DATE 21/09/72

MEDIAN (DEG.C)	FREQUENCY NO.	PCT	. 60 120 180 240 300
6.72	0	0	
6.76	0	0	
6.80	0	0	
6.84	0	0	
6.88	0	0	
6.92	3	0	*
6.96	0	0	
7.00	22	1	****
7.04	18	1	***
7.08	180	10	**********
7.12	82	4	**********
7.16	161	9	**********
7.20	171	9	**********
7.24	201	11	**********
7.28	99	5	**********
7.32	98	5	**********
7.36	50	3	********
7.40	25	1	****
7.44	5	0	*
7.48	14	1	**
7.52	37	2	******
7.56	24	1	****
7.60	13	1	**
7.64	30	2	*****
7.68	22	1	****
7.72	34	2	******
7.76	19	1	***
7.80	49	3	********
7.84	37	2	******
7.88	79	4	**********
7.92	24	1	****
7.96	44	2	*******
8.00	59	3	**********
8.04	61	3	**********
8.08	32	2	*****
8.12	62	3	**********
8.16	57	3	**********
8.20	29	2	*****
8.24	0	0	
8.28	0	0	

NO. OF SAMPLES OVER 8.30 = 1
NO. OF SAMPLES UNDER 6.70 = 0
TOTAL NO. OF OBSERVATIONS = 1842
SAMPLE INTERVAL = 10 MINUTES

25059